

THE *Soybean Digest*

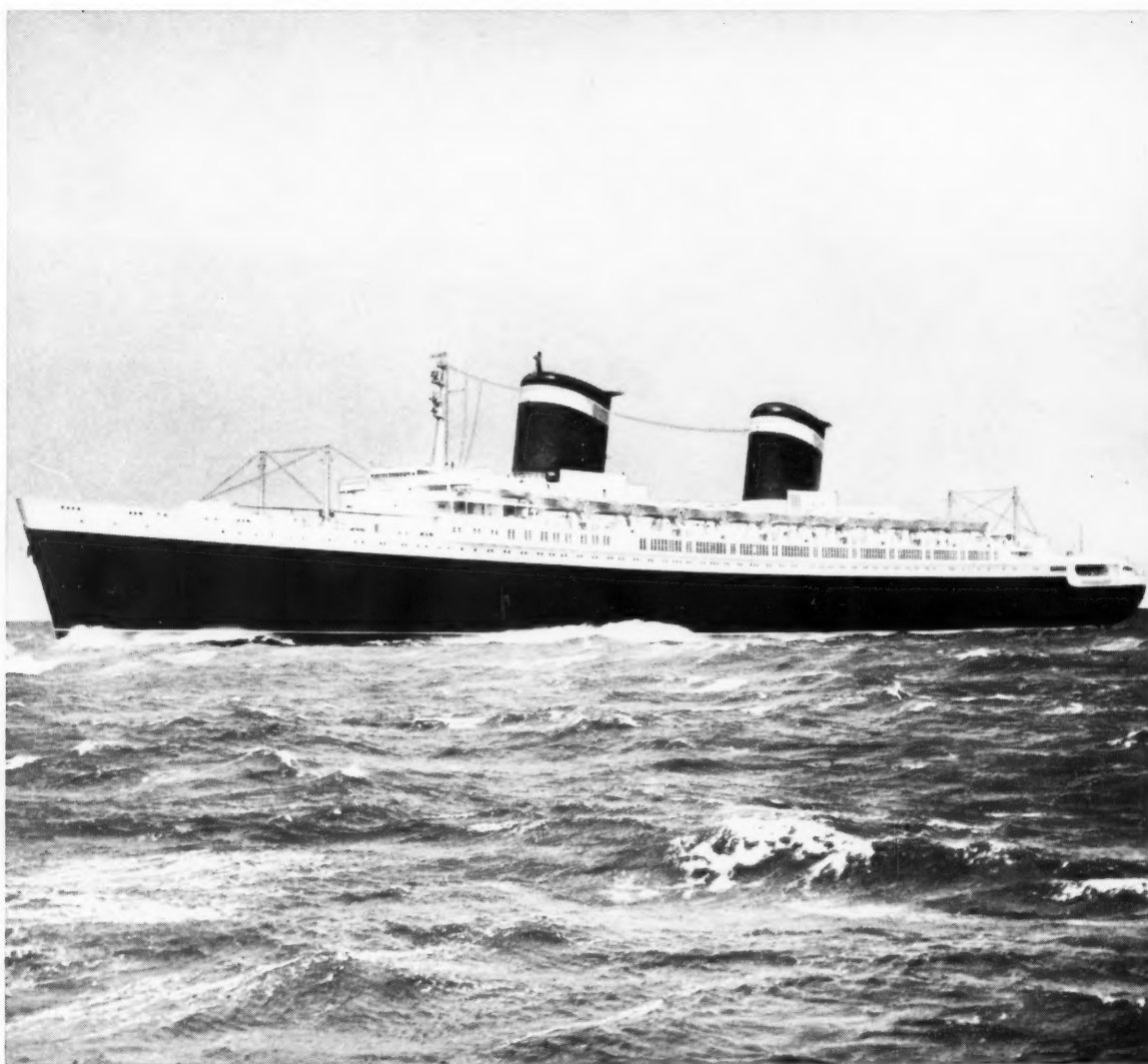
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Planting time



APRIL • 1956

VOLUME 16 • NUMBER 6



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THE Soybean Digest

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HUDSON, IOWA

Vol. 16 • April, 1956 • No. 5

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THE SOYBEAN DIGEST

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Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safe-guarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the industry.

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EDITOR'S DESK

By GEO. M. STRAYER

WORK FOR INDUSTRY COUNCIL Throughout the winter months a subcommittee from the joint committee established last August between the American Soybean Association and the National Soybean Processors Association has been working on proposed articles of incorporation and bylaws for the joint industrywide organization of the soybean industry. Attorneys for both organizations have now completed their work, and it is anticipated that within a short time the initial organization steps will have been completed.

The soybean industry has been blessed with a long period of expanding markets. There was always someone waiting at the door for the total production of soybean oil and soybean oil meal.

Today we are still in an era of expansion. Domestic processing of 1955-crop soybeans is still at the highest rate in history. Mar. 1 planting intentions reports indicate the largest acreage of soybeans in history for 1956.

The time is rapidly approaching when the soybean industry will have major sales problems facing it. Not always will P. L. 480 provide our market for oil, as is the case at present. With livestock population already at the highest point in history there is some question about how much further we can go in expanding meal markets, without doing active promotional work.

Contemplated formation of the industrywide organization is well timed.

REPORT IS EAGERLY AWAITED Eagerly awaited here in the States is the report of the joint study team mentioned in last month's lead editorial. That five-man team is now in Europe, studying the arrivals of soybean cargoes which were observed, sampled and graded as loaded aboard ship at U. S. ports.

European countries have, through a long period of years, developed a basis of grading and trading on oilseeds and oil-bearing materials. The United States has developed a set of standards on soybeans. Buyers in European countries have expressed desire to buy on the basis of their established procedures. Only the official U. S. grades are applicable on grains, including soybeans, exported from the United States.

Out of this study by representatives of the United States, England, Netherlands and Germany we hope will come the understanding which will lead to increased purchases of American soybeans. We expect to have the supplies. The European countries have need for them. When they under-

stand our problems and we understand theirs the area of agreement usually becomes clear. We will eagerly await the joint report, the report of the European members to the IASC meeting in June.

NEED SOME CHANGES IN USDA SETUP Prewar, the United States was a large net importer of fats and oils. Supplies came from throughout the world, of various types and origins. Then our sources of supply were cut off at Pearl Harbor, and we found it necessary to stimulate soybean production to the point where it would meet our needs and also supplies for our allies.

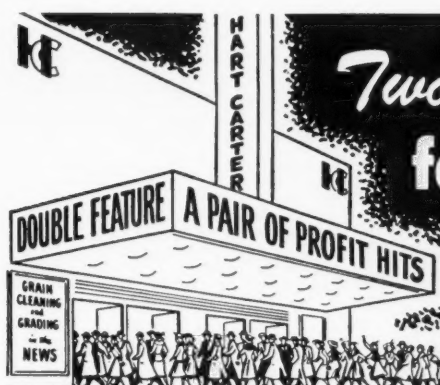
Today the United States is the world's largest exporter of fats and oils and oilseeds. We are in business in a big way, and we propose to stay in business. Our mechanical production methods, climate, soil resources and our handling and crushing facilities lend themselves to the production of edible and industrial oils at competitive prices.

As we have gone from the role of a net importer of fats and oils to the role of the world's largest exporter it seems probable our U. S. Department of Agriculture may not have kept pace, organization-wise, with the changes.

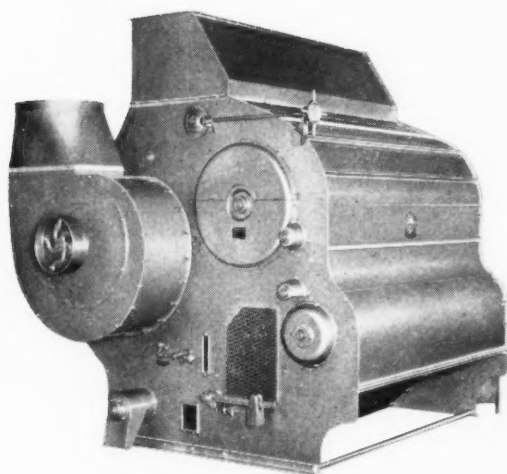
Today we have oils and oilseeds scattered throughout the Department. Price support operations on soybeans fall in one division of the Department, yet other and competitive oilseeds are administered by another division. But when viewing the overall fats and oils situation we must look at all crops! Cottonseed falls one place. Peanuts another. Flax and soybeans together in still another. Yet it is cottonseed and soybean oil that are competitive and should be considered together, not soybeans and flaxseed!

Is it not time that consideration should be given to placing the administration of all oilseeds under one head in USDA? Both price support operations and disposal programs on CCC stocks? So that there might be close coordination of programs, better planning and execution? Is it not time to consider the proper reorganization of departmental functions applying to oilseeds, in order to give proper recognition to today's importance of oilseed crops? And to the greatly changed picture from that which prevailed when the present departmental lines were established?

Such a move should have careful study. It should not be taken without proper planning over a period of time. We suggest a review of the entire picture, designed to properly evaluate today's relative importance of the different oilseed crops.



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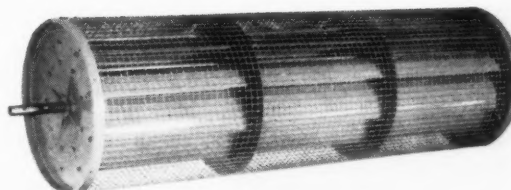
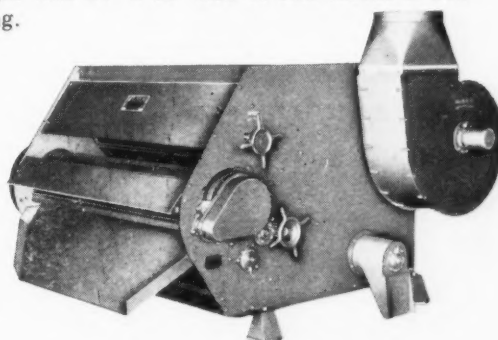


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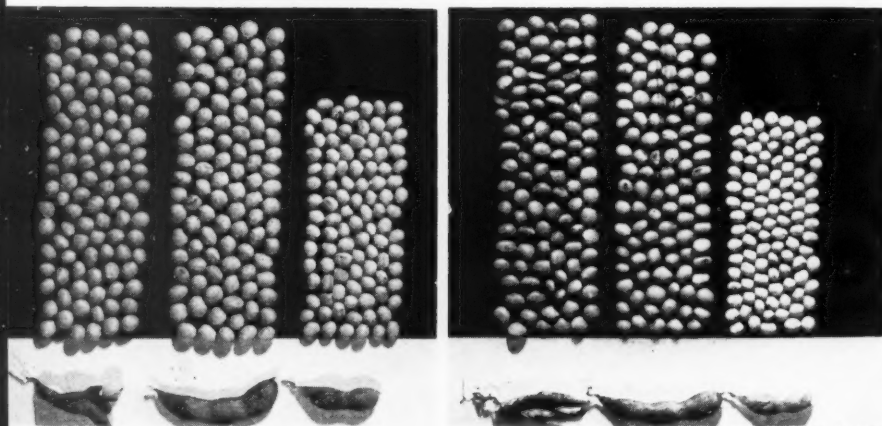
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GROWERS



—Photos Courtesy Iowa Farm Science

LEFT: A comparison of 100 seeds and one pod from each of (l. to r.) Kanro, Kanrich and Richland. All of these varieties have a yellow seedcoat. Seed of Richland is smaller than that of other varieties.

RIGHT: A comparison of 100 seeds and a pod from each of (l. to r.) Sac, Kim and Richland. Sac and Kim have green seedcoats; Richland has a yellow seedcoat. Again, note that Richland seed is smaller.

New Vegetable Varieties

TWO new vegetable-type soybeans, developed through state-federal cooperative research, are announced by the Iowa State College and the U. S. Department of Agriculture.

Seed from these two edible soybean varieties, named Kim and Kanrich, have been supplied to commercial seed and canning companies for testing during 1956. They will gradually become available to the home gardener and to food canners and freezers through regular seed sources following further seed increase. Neither Iowa State College nor the U. S. Department of Agriculture has seed of these varieties for distribution to gardeners.

Growers of field-type soybeans

are cautioned not to switch to either of these new vegetable soybeans unless they have a market connection with a seed concern or food canning or freezing company.

Agronomist Charles R. Weber, a joint employee of Iowa State College and USDA's Agricultural Research Service, has been primarily responsible for the development of the new varieties.

Kim and Kanrich, the result of more than 10 years of breeding research, are strikingly superior to their predecessors. Kim grows an average of 15 inches taller than Sac, its vegetable-soybean parent, and has averaged nearly 14 bushels more beans per acre. Pods of the new variety shatter very little after ripening (Sac shatters badly), and

its beans are better tasting. Kanrich represents a similar research improvement over its edible soybean parent, Kanro. A field variety, Richland, is a parent of both new varieties.

The new soybeans are highly nutritious and can be used as a green or fresh-frozen vegetable when harvested prior to maturity. As mature dry beans, they can be baked or used in soups.

The varieties are generally adapted to the same area as the field soybean Hawkeye—in the North Central and Middle Atlantic regions. Planted in May, green beans of Kim and Kanrich are ready for harvest in late August or early September.

Taylor Iowa Winner

KENNETH Taylor, Indianola, was named winner of the 1955 Iowa Master Soybean Grower contest at the annual banquet of the Iowa Crop Improvement Association. Taylor, winner of the same contest in 1950, received the John Sand trophy for his winning yield of 36.55 bushels per acre.

Soybeans are a major part of the Taylor farming operation which includes 266 acres of land. Yields were unusually low this year because of the low rainfall during the growing season, says Taylor. He points out that his winning yield in 1950 was 48 bushels per acre.

This year's winning field had been in corn in 1954 and was spring plowed early in 1955. He disked and harrowed the land early in the spring and again just before planting to get a complete weed kill. He planted certified Clark soybeans in 40-inch rows at the rate of 70 pounds per acre about May 15. The field was harrowed and cultivated three times. Taylor walked through the field during the summer and pulled the remaining weeds.

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Mississippi County Farm Bureau made out a check for \$300 to help finance the cost of the soybean market development study in Japan. Left to right, Hays Sullivan, Bill Wyatt, Tom Callis and Earl Wildy. Wildy is president, Callis is secretary and Sullivan and Wyatt have been active in the country's soybean program.

Proceed on Japan Project

SIGNING of a market development project on soybeans for Japan was announced jointly by the Foreign Agricultural Service, U. S. Department of Agriculture, and the American Soybean Association early in April. This project, designated as soybean project No. 2 supplements the general market development agreement signed between the two organizations previously, which designated the American Soybean Association as the official cooperator with USDA on projects involving P. L. 480 funds.

Total project provides for the expenditure of a maximum of \$75,000 in Japanese yen in conducting an extended survey of deliveries of American soybeans, under the new grading standards which went into effect on Sept. 1, 1955, and also of deliveries of soybeans from other countries into Japan. Preliminary details were worked out with the Japanese soybean trade groups by Geo. M. Strayer while in Japan last October and November.

Also included in the plans is the visit to the United States by a team of representatives of the five major Japanese soybean trade groups during the 1956 harvest season, with visits to the production areas, country elevators, terminal elevators, and to port elevators, so they may acquaint themselves with all stages in the handling of soybeans going into the export trade.

Establishment of an office in Tokyo, Japan, by a joint committee of Japanese interests and the American Soybean Association is contemplated. First step will be the formation and activation of this Japanese-American Soybean Institute, and the employment of a managing director to be in charge of Tokyo operations.

Ersel Walley, former president of the American Soybean Association, and currently a member of the board of directors, is now in Japan as an official representative of ASA. And as soon as the Osaka Trade Fair ex-

hibit is completed and the Fair opens Marion Hartz will be placed in charge of the operation of the exhibit and Walley will begin activation of the market development project and the formation, together with the Japanese groups, of the Japanese-American Soybean Institute.

Basic purpose of the cooperative project, which involves funds from P. L. 480 sources, from Japanese Trade Association sources, and from the American Soybean Association, is to assemble the needed information on the requirements of the Jap-

anese market for soybeans so that exports of American soybeans may more nearly fill those needs, and thus expand the Japanese market for American soybeans.

Only a portion of Japan's needs for soybeans is now being filled from any source. Prewar Japan, with a population of about 60 million people, imported as much as 800,000 metric tons of whole soybeans and 1 million tons of soybean cake and meal per year. Currently Japan has a population of nearly 90 million people, yet the 1954-crop-year imports of soybeans totalled only slightly over 700,000 metric tons of whole soybeans, with no meal imports.

Objection to foreign material content and green-seedcoat color of many shipments of soybeans received from the United States has repeatedly been offered by Japanese buyers. This study will be conducted as a means of determining just how American deliveries do compare with those of Manchurian and Brazilian sources, and of arriving at basis of buying and contracting which will enable those Japanese buyers who require special quality or type of beans to secure their needs.

The current project is written to cover a period of one year from Apr. 1, 1956.

INOCULATE SOY BEANS

with

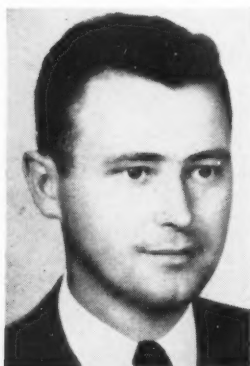


IT PAYS!

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Urbana, Illinois

What Are the Bottlenecks in Soybean Production?

Three leading agronomists provide some answers



JOHNSON: The real problem is profit.



CARTTER: Needed, a planter and combine designed specifically for soybeans.



HARTWIG: A double disk opener promising for clay soils.

By J. W. CALLAND

Managing Director, National Soybean Crop Improvement Council

2,435 soybean growers in 17 of the principal soybean states answered questionnaires in 1955 on the cultural and weed control practices they use on growing soybeans. Summaries of their answers will appear in future issues of the Soybean Digest.

The final question these growers were asked was, "What in your opinion are the 'bottlenecks' or principal problems which limit soybean production?" Naturally, the answers to this question varied some between growers in the North Central states and those of the Southern and Atlantic Coast states. But in the main they agreed fairly well that the more serious things that handicap soybean production are:

Weather, weeds, low soil fertility, poor stands, low yields, lack of price inducement, insects, disease, lack of response to fertilizer, poor cultural practices, and combine losses.

The growers appeared to rank these problems in about the order of importance that they are listed here.

In connection with this survey of soybean growers, three scientists who have been for many years working on research problems connected with increased production of better soybeans were asked to present to the advisory board of the National Soybean Crop Improvement Council at its 1955 annual meeting what in their opinions are the chief bottlenecks to increased soybean production.

Herbert W. Johnson, research agronomist, of the field crops research branch of the U. S. Agricultural Research Service of Beltsville, Md., commented first on fertility and our inability to generally increase soybean yields by application of fertilizer similar to the gains secured on corn and several other crops. He said the problem of getting good response to fertilizer applied to soybeans may evolve around a key time to apply the fertilizer.

For instance, there is indication that the uptake of phosphorus is reduced at a time when the plant's

need of phosphorus is critical. He feels that when we find how to get good response to fertilizer where the soil is naturally high in fertility it will not come at planting time but will come when applications are made at a particular time in the growth of the soybean plant when it is not taking up enough of the elements it needs.

Weed Problem

Commenting on weeds, Johnson said it is easy to understand why so many growers answered that their weed control operations kept their soybeans reasonably free from weeds and still they listed weeds as seriously reducing yields. He said that even when weeds are removed at an early stage they will still reduce yields. Getting rid of weeds is a serious problem because it costs time and money to do it. The fact that most growers control the weeds does not eliminate the seriousness of the weed problem.

Continuing, he said it is a shame to lose 10 to 15% of the crop during harvesting operations, that surely if agricultural engineers and farm machinery manufacturers put some time on this problem the loss can be reduced.

It seemed to him that we should think more in terms of increased profit. Increased yields may not always be profitable. It depends on the amount of extra cost required to get this increase. **The real problem is how to increase dollars of profit per acre of soybeans.**

Emphasizing the importance of better cultural practices, he described two types of disk openers for planting soybeans that they are experimenting with on heavy clay lands and said that results have been fantastic not only in experiments but also on a farm scale.

J. L. Cartter, director of the U. S. Regional Soybean Laboratory at Urbana, Ill., discussed mainly some of the problems that are limiting soybean research. He said one of the major tasks of a soybean plant breeder is determining the value of new strains. Since most of these come from crosses, one of the urgent needs is for a method of determining the combining ability of parental material without involving the tremendous number of crosses of plant

introductions now required to secure the combination of genes that will give us the highest gene frequencies for such characters as high yield, oil, etc.

New and much faster methods of chemical analysis of determining oil and protein values are badly needed. Some improvement has recently been made in a faster method of determining oil quality but chemists must yet develop rapid methods for determining the essential amino acids before they can be used as a tool in breeding to improve protein quality.

Another problem, said Cartter, in the development of new varieties is how to establish uniform epiphytotic (epidemics) of various soybean diseases in the selection of strains for disease resistance. When this can be done for even our more serious diseases, then we can make our selections for resistance in the F₂ and F₃ generations and tremendously reduce the plants that now have to be carried forward to succeeding generations.

Getting Stands

Among the cultural bottlenecks discussed by Cartter were the difficulty of getting good stands at proper seeding rates and the problems of weed control. He feels that with further research on chemical control the weed problem can be reduced, and when they develop machinery designed specifically for soybean planting, we may be able to get our seeding rate down to the optimum for yield.

He pointed out that since moisture is such an important factor in environment, we might be able with a controlled water supply in our soybean nurseries to breed a soybean that would give maximum yield under average moisture conditions or a variety with high yield under irrigation.

In conclusion he said we do not have a combine that has been specifically developed for soybeans. All we have is machinery designed for small grains and carried over with some modifications to handle the soybean crop. Surely it is time for the machinery manufacturers to make an entirely fresh start in designing a combine specifically for the soybean crop.

Dr. E. E. Hartwig, who is coordinator for soybean investigations in the 12 Southern cooperating states with headquarters at the Delta Branch Station at Stoneville, Miss., discussed bottlenecks limiting soybean production in the South.

Dr. Hartwig said one of the most uniform things they have in the production area in the South is the extreme variability between locations and between seasons. The differences between seasons in almost any location in the South are much greater than are generally prevalent

throughout the North Central area.

One of the primary factors necessary to a satisfactory yield is a satisfactory stand. Everything that happens is dependent on the stand you get at the start. That influences your weed control practices, the harvesting losses and the final yield.

One of the largest production areas in the South is the Mississippi Delta area. This is also a cotton growing area. Cotton is grown primarily on sandy loam and soybeans are grown on the heavy clay soils where they do well providing they are planted at the proper time and make a satisfactory stand. These soils are very fertile but have definite physical properties that make them difficult to work. Farmers cannot work the soil down to a fine mulch, but distribute their seeds among the clods and assume they will get a rain fairly soon. If they do, they will have a stand. This is also a factor with other crops grown on these soils. Delaying planting until some time in early May has shown a definite advantage. Some feel that the earlier you plant the more chance you have of frequent rains, but you should be able to put the seed in the soil at the proper time so that you can get immediate emergence.

Double Disk Opener

Dr. Hartwig stated that they had done some preliminary work which looks very promising, using a double disk opener. This suits the heavy sticky clay and will roll through there when the action of the ordinary shoe opener leaves a very wide trench. It is also possible to plant in stubble without any preparation. They are working with the machinery manufacturers who are interested in it and have made some improvements on it. They hope some of this equipment will be on the market this coming year and as it is used more they will learn more about additional problems in connection with its use.

Uniform stands are not the only problem with Delta soils. Most of the Southern soils respond to the application of fertilizer, but the problem is getting the proper distance between the fertilizer application and seed location so as not to injure stands. There is equipment that does a satisfactory job but not every farmer has all of it, and some equipment on the market does not do as good a job as it should. A little more improvement in the facilities for planting and fertilization is important, and a uniform stand is also important to get the best response to the fertilizer used on the crop.

The quality of the seed is extremely important. Dr. Hartwig said that in breeding programs in the South and in release of newer varieties, they have given attention



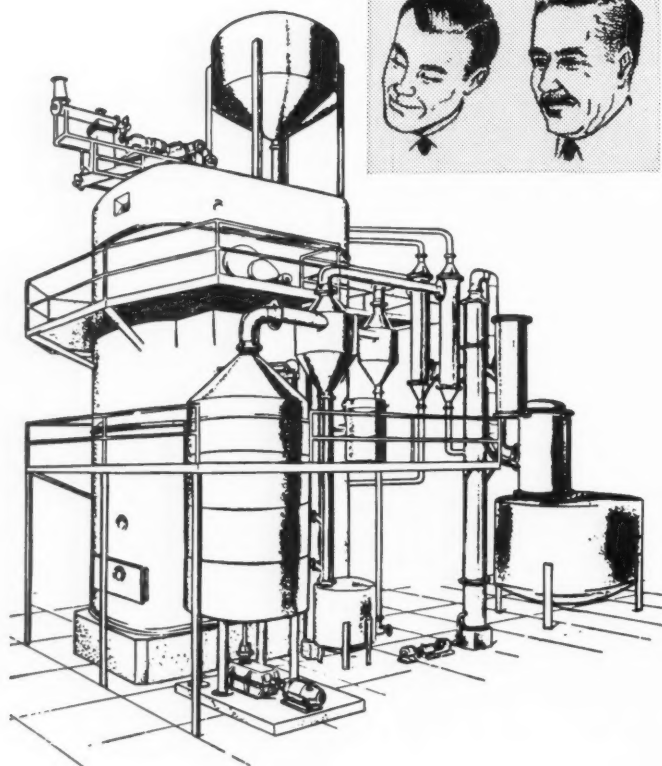
THE HARVEST we really want is profits.

to producing strains that would, under their weather conditions, produce high quality seed. They have made good progress on the Lee variety and the farmer reports the past year have been most enthusiastic about Lee.

Another problem they have in the South, Dr. Hartwig stated, is that they have differences in strains in pod set. They know that time of planting, etc., influence the percentage set at any given time. Ogden still is the most commonly grown variety in the South. With good growth and normal flower production, if every flower would produce a two-seeded pod, they would have a potential 250-bushel yield. There are differences between strains in the degree in which they set pods under these conditions.

When the South more fully understands this problem, it will make considerable progress in raising the potential yield level of soybeans.

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Late News

Vol. 4, No. 5

Hudson, Iowa

Apr. 6, 1956

Published 32 times
yearly as a service
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INDUSTRY- WIDE ORGANIZATION

A meeting of the joint committee of the American Soybean Association and the National Soybean Processors Association Apr. 10th is expected to **complete initial steps in the formation of the planned industrywide organization of the soybean industry.** Target date for putting the program of the organization into effect and beginning collections on 1956-crop soybeans is now only a month away.

During the winter months a subcommittee has been working on proposed articles of incorporation and bylaws. Attorneys for ASA and NSPA have now completed their work. The new organization, which will be similar in function to other nationwide commodity groups, will be incorporated in Illinois. Though set up jointly by the producer and processor associations, memberships will also be open to dealers and other interested groups.

PLANTING HAS STARTED

The 1956 soybean planting season is now under way. **Beans are already being planted in the lower Mississippi Delta,** and a big part of the acreage in the South will be planted in the next 3 weeks. A few soybeans were planted in the Missouri Bootheel the last week in March, according to Albert R. Cravens, Missouri Soybean Co., at Caruthersville. Planting will generally get under way in the area by mid-April.

There is nothing so far to indicate any variation from the normal late May-early June planting in the northern bean belt.

Right now our reporters have little inclination to take issue with USDA's Mar. 1 planting intentions report which indicates 2.1 million more soybean acres overall as compared to last year. They expect planting weather, price prospects, etc., will have more effect on acreage than any farm program that may become law.

TREND TO YELLOW BEANS

A radical swing away from green-coated varieties to yellow beans in the South this spring is reported. Jacob Hartz, Jr., Jacob Hartz Seed Co., Stuttgart, Ark., reports a **good demand for seed of the yellow varieties,** with little demand for the Ogden type. "It will be necessary for Ogdens to be planted because there will not be enough of these yellow-skinned varieties to take care of the seed demand. We . . . doubt seriously if there will be many more green-skinned varieties by harvest in 1957."

Cravens at Caruthersville, Mo., reports that about 25% more yellow beans will be planted this spring than last.

STILL DRY IN WEST

U. S. Weather Bureau calls the soil moisture east of the Mississippi River generally ample and locally excessive. (We do have spot reports of deficient soil moisture in Illinois and Ohio.)

Iowa and states to the west and southwest continue seriously deficient in soil moisture. Elmer L. Buster, Kansas Soya Products Co., Emporia, Kans., says the soybean acreage in Kansas depends entirely on moisture received prior to planting. "We are still confronted with a very serious moisture deficiency."

Cravens at Caruthersville, Mo., writes: "I believe we can look this year for better yields as our water level is higher than for the past 2 years."



MARKET OUTLOOK

A carryover of soybeans into next year substantially smaller than has been anticipated is suggested by USDA's latest report on the fats and oils situation.

It's based largely on a **high estimate of the crush through the balance of the marketing year, and some decline in exports** from what was anticipated a month ago.

Situation is added up this way:

Disappearance of soybeans through February (including 30 million bushels for seed) is figured at 197 million bushels. This would leave a Mar. 1 supply of 184 million bushels, counting the total supply at beginning of the year at 381.3 million.

Exports March through September are now estimated at about 21 million bushels, bringing the **total for the year to about 65 million, up only 5 million from last year.** Nearly 3 million more bushels than this were exported during the March-September period a year ago. Reasons for the lower figures for this spring and summer; higher prices, emphasis on export of oils, plus the belief that CCC will not get many beans from price support operations. (Exports as of Mar. 23 were running about 7 million bushels ahead of a year ago.)

The crush of soybeans from now through the balance of the year is placed at 157 million bushels—over 22 million a month. February crushings were again 24.5 million bushels, bringing the total for the first 5 months of this marketing year to 123.6 million bushels.

If exports and crushings reach these figures, **carryover next fall would be around 6 million bushels.**

The farm stocks report out Apr. 10 and the general stocks report due about the 30th will give clues to supplies still remaining. Continued country movement of beans in the North is reported.

USDA officials expect edible oil prices to hold firm, possibly rise a little more, but not get out of hand unless unforeseen demand enters the picture.

They think soybean prices will be "well sustained" during the balance of the marketing year, but they do not foresee any large market rise. **New crop outlook is expected to begin to exert an influence on prices early this summer.** (For this reason, some observers are beginning to warn against holding any remaining supplies of beans too long.)

There may be a little rise in soybean meal prices during the spring months, Washington officials think. But any lift is not likely to be large, because of the big supplies from a large crush.

	Cash prices Mar. 29
Soybeans, No. 2 yellow, Chicago, bu.	\$ 2.68
Soybean oil meal, Decatur, ton	49.50
Soybean oil, crude, Decatur, lb.14 $\frac{1}{8}$

	Cash price to farmers for No. 1 soybeans Mar. 29	Price to farmers for No. 2 soybeans Mar. 29	Retail cash price for bagged soybean oil meal Mar. 29
Ill.....	\$2.52@ \$2.54		\$67@ \$68
Ind.....	2.47		70
Iowa.....	2.40@ 2.42 $\frac{1}{2}$		70
Kans.....		\$2.41	66
Mo.....	2.35@ 2.48		67@ 69
N. C.....		2.38	
Ohio.....	2.56@ 2.58		
Okla.....	2.30	2.30	65



What is a Farm Mother?

Well, that depends on whom you ask:

To her son, she's something with jobs that leave him no time to play.

To her neighbors, she's a person to turn to for help.

To her daughter, she's someone who always needs help.

To the mailman, she's a name on a letter.

To her chickens, she's an egg-taker.

To the dog, she's food and drink.

To the storekeeper, she's a customer.

To her preacher, she's a child of God.

To the artist, her face is stamped with all humanity.

To the unobserving, she's a face in the crowd.

To her mother, she's still a child.

To her husband, she's a reason for living.

So you see, it depends entirely on whom you ask. Actually, this woman is all of these and more. For one thing, she represents woman at her best . . . one who bears children . . . who knows the dignity of work . . . and one who bows humbly before God. She is a woman who lives by the whims of nature, but lives without bitterness. And what is this woman's function? It is to raise her children to work and love, for they are the hope of tomorrow and they, and their children, are her immortality. Her hopes and dreams are hopes and dreams for her children's good lives.

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Need For Research On Soybean Oil Meal*

PART I

By L. L. McKINNEY and J. C. COWAN

Northern Utilization Research Branch, Agricultural Research Service,
U. S. Department of Agriculture, Peoria, Ill.

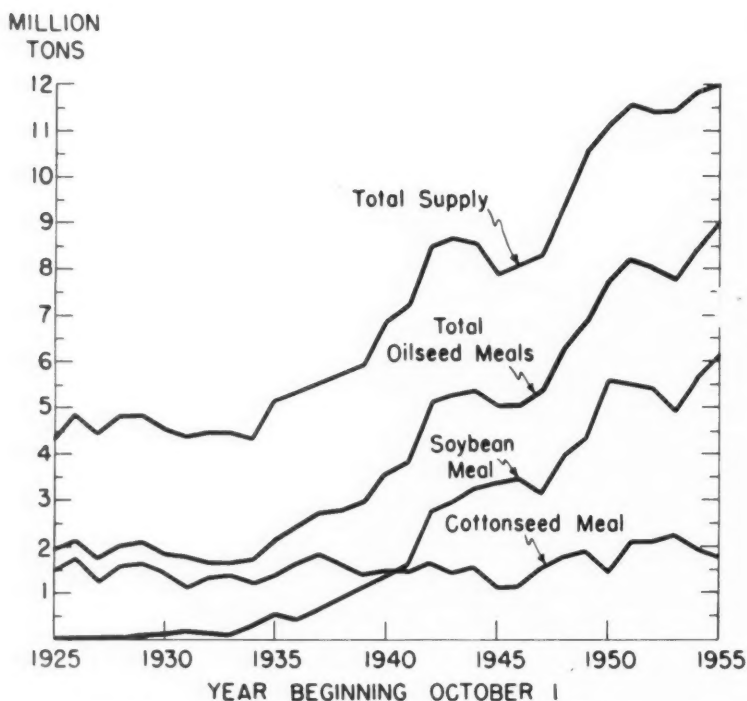


Figure 1. High-protein feed supply, 1925 to 1955 (soybean oil meal equivalent, or 44% protein basis).

THE TOTAL quantities of high-protein feeds available for livestock feeding for the past 30 years are shown in Figure 1. The tonnages are all calculated to soybean oil meal (SOM) equivalent or 44% basis as described in USDA Feed Situation No. 149, Jan. 4, 1954.

The total meals include peanut, linseed, and copra, as well as soybean and cottonseed meals. The difference between the total for oilseed meals and total supply of high protein feed concentrates is due to animal protein sources, such as tankage, fish meal, and milk products.

It is readily seen that increase in high-protein concentrates over the past 20 years is due solely to SOM which now accounts for 50% of the total supply, and represents the only possibility of materially increasing our short supply of protein for feeds.

SOM has a current value of \$400 million per year as feed and each percentage increase in feed efficiency that can be effected by research is worth about \$4 million per year to American agriculture.

SOM has a high nutritive value when properly processed for feeds. It is possible, but not probable, that the maximum nutritional value attainable is being developed by present processing operations and feeding procedures. Our lack of knowledge of the constituents, and of the chemical and biological properties of these constituents, precludes a definitive evaluation of the feed use of the meal. It is the purpose of this paper to point out our lack of knowledge of only a few of the constituents of SOM that may be of nutritional significance. Specifically, vitamins, extrogens, saponins, es-

sential amino acids, and proteins will be discussed.

Vitamins

Known Vitamins. The vitamin content of soybeans, extracted SOM (toasted), and of screw-pressed SOM as reported by Markley (1), together with the National Research Council requirements for swine (2) and poultry (3) are listed in Table I. With the possible exception of vitamin B-12 SOM appears to be self-sufficient in the B vitamins but deficient in the fat-soluble vitamins. This deficiency of fat-soluble vitamins is more pronounced in extracted meals than in pressed meals which necessitates greater care in formulating feeds containing extracted meal in order to insure adequate vitamin E and K.

Before we become too self-satisfied with our knowledge of the B vitamins in SOM, let us examine them more critically. Niacin, choline, and pantothenic acid are often present in borderline quantities in natural feeds. It has been shown that poultry rations composed largely of corn and SOM may be deficient in these vitamins (4). Yet we know very little of the variation of these vitamins with varieties of soybeans.

Futhermore, it is now known that all pantothenic acid determinations made before 1949 may be incorrect (5). Thiamin is generally considered to be present in adequate quantities in natural feeds, including SOM. However, it has been reported (6) that soybeans contain an "anti-thiamin" factor which destroys this vitamin in the meal and in other thiamin-containing materials added to the meal. Autoclaving did not completely inactivate this antithiamin factor.

Another condition which may affect the stability of thiamin in SOM feeds was recently reported by Holland workers (7). These workers have shown that the loss of thiamin during the cooking of food is largely due to the browning reaction and not to the instability of thiamin to heat; i.e., the amino group of thiamin reacts with the aldehyde group of reducing sugars which are liberated

* Presented at the annual convention of the American Soybean Association, Aug. 30-31, 1955, in Cincinnati, Ohio.

Table 1.—Vitamin Contents of Soybeans and Soybean Oil Meal Related to the Quantities Required for Feeds.

Vitamin	(Amount per Pound of Feed)				
	N. R. C. Requirement ¹	Poultry	Swine	Soybeans (Range)	Soybean Oil Meal Extracted Pressed
B Vitamins					
Biotin, mg.	0.04- ?	+	(?)	0.2-0.4	unknown unknown
Choline, mg.	600-750	400- ?		1000-1500	1000-1500
Folic acid, mg.	0.11-0.4	+	(?)	0.85-0.98	1-2
Inositol, mg.	+	none		800-1200 ⁴	900-1300 ⁴
Niacin, mg.	12-25	5-8		9.1-10	9-17
Pantothenic acid, mg.	2.1-5	4.5-5.0		7.2-10.2	6.1-10.0
Pyridoxine, mg.	1.2-1.3	0.6		5.0-5.7	4.6
Riboflavin, mg.	0.8-1.8	1.0-1.2		1.2-1.6	1.1-1.7
Thiamin, mg.	0.8- ?	0.5		ave. 9	0.8-6.1
Vit. B-12, mcg.	2-4	5-7		none?	none?
Fat Soluble Vitamins					
Vit. A, I. U. ²	1200-2400	1250-5000		320-1200	200 100-400
Vit. D, I. U. ³	90-400	90		low	low 11
Vit. E, mg.	+	none		ave. 16.6	low unknown
Vit. K, mg.	0.18	none		0.5	low 0.2

¹ Varies with the age of the animal, hence ranges given. ² One I. U. = 0.3 ug. Vit. A. alcohol = 0.6 ug. B-carotene. ³ One I. U. = 1 u. s. p. unit = 0.025 ug. Vit. D3. ⁴ Occurs mostly in phytin which is only partially available.

during the cooking process. Since this reaction proceeds at its optimum rate at moisture contents of 10 to 20%, it can be expected that it would continue during storage of the meal or feed.

Unknown Vitamins. Not all of the vitamins have been identified. There are two or more unidentified growth factors for chicks (8, 9), and one or more for swine (10) and cattle (11). In 1954, Cornell workers (9) reported that commercial soybean protein contained one or more unidentified growth factors for chicks. They were able to remove this growth-promoting substance by washing the protein with dilute acid (pH 4.6).

In 1955, further studies were reported by Texas Agricultural and Mechanical College (12) and Dr. H. M. Scott of the University of Illinois (13). The Texas workers were able to extract the growth factor(s) from commercial protein with 70% isopropyl alcohol. They showed that chicks exhibited 41% greater gain on a diet containing the unextracted soybean protein supplemented with all known nutritional factors than they did on the extracted protein. The addition of distillers' dried solubles to the diet containing extracted (vitamin free) soybean protein gave a growth response of only 33%. When distillers' dried solubles was added to the unextracted soybean protein, a growth response of 13% over the unextracted protein was obtained. These results indicate that the growth factor(s) in soybean protein may not be identical with that in distillers' dried solubles. Dr. Scott was unable to remove the growth factor(s) from soybean protein by redissolving the protein in alkali and reprecipitating with acid or by reprecipitating with alcohol.

The fact that the unidentified growth factor(s) in commercial soybean protein can be readily washed out indicates that it occurs in the protein as an impurity and should be present in the meal in much larger quantities. The presence of anti-growth factors in SOM prevents

study of the growth factors in the meal *per se*, and undoubtedly accounts for the fact that the presence of these growth factors was not demonstrated until nutritionists started using the isolated protein in their feeding studies. The isolated protein is apparently free of anti-growth factors.

Estrogenic Activity

In 1946, reports began to appear in the Australian veterinary journals (14) concerning the decrease in lambs from ewes grazing in subterranean clover. In some cases lambing fell below 10% of normal with a 30% loss in ewes. During the period since 1950 the Australians have isolated isoflavones from the clover and have shown that these natural yellow dyes, found in most plant materials, are the causative agents (15, 16). Genistein, an isoflavone also found in SOM, was found to be the principal one involved.

The isoflavones have biological properties identical with those of stilbesterol (diethylstilbesterol). Both of these compounds are pro-estrogens and are converted into the true hormones by the body. Stilbesterol is efficiently converted into the true hormone and has about equal activity. The isoflavones are not efficiently converted into the true hormone and have low activity. Genistein and diadzein, both of which are present in SOM, have about 1/50,000 of the activity of stilbesterol (17), and the estrogenic activity varies considerably with the different isoflavones. It has been shown that both the isoflavone and the isoflavone glucosides exhibit the same amount of estrogenic activity (18).

The presence of estrogenic substances in feed can be good or bad depending upon the purpose of feeding the animal. Iowa State College workers (19) have recently shown that the addition of 5 mg. per day of stilbesterol to steer rations can increase live-weight gains by as much as 35% over control animals not receiving stilbesterol, with a reduced feed cost per unit of

gain of as much as 20%. On the other hand, the Australians (14, 15, 16) have shown that the presence of 7 to 10 grams per day of genistein in ewe rations resulted in sterility or infertility of the female.

The work that has been done on the isoflavones of SOM is of a qualitative nature only. We do not know the actual isoflavone content. According to Markley (1), the presence of six isoflavones, usually in the form of glucosides, has been reported. These are genistin, diadzin, isogenistin, taitoin, methylgenistein, and methylisogenistein. The "in" suffix denotes glucosides and "ein" denotes the free isoflavone.)

Two of these, genistein and diadzein, have been shown to have estrogenic activity (17). The estrogenic activity of the other four is unknown. From the work of Walter (20) at Purdue, which was reported in 1941, we know that SOM contains at least 0.1 percent of genistin.

We have no information on the variation of isoflavone content with variety. Another unknown factor is what happens to the isoflavones and their glucosides during toasting of the meal. Calvert (21) has called to our attention that soybeans contain enzymes which are liberated when the bean is flaked and, in the presence of air and heat, it is possible that the isoflavones are degraded to the point where their estrogenic activity is lost.

Work to date has shown that the isoflavones have only 1/50,000 of the activity of stilbesterol. If 5 mg. of stilbesterol per day is required for fattening steers and we assume that SOM contains 1% active isoflavones (an extremely high estimate), it can be readily calculated that 1/2 pound of isoflavones would be required and that the steer would have to eat about 50 pounds of SOM per day to get this response.

On the other hand, if only 7 to 10 grams per day of isoflavone are required to cause sterility in ewes, sheep would have to consume only 1 1/2 to 2 pounds of SOM per day at a 1% level of isoflavone in the meal and no such sterility from the ingestion of SOM has been reported.

Recent work at the North Carolina Agricultural Experiment Station (22) indicates that SOM has a slight estrogenic activity on mice. Kendall and his group (23) at the University of Illinois have shown that soybean hay has sufficient estrogenic activity to cause sterility in rabbits.

It becomes apparent that considerable research must be done on the isoflavone content of SOM, the variation with variety, and the effect of the toasting operation, as well as actual feeding tests, before the role of the isoflavones can be properly evaluated.

Saponins

The term saponin is applied to a group of glycosides which occur in

many plants, and are characterized by markedly lowering the surface tension of water to produce soapy lather. They are bitter and cause hemolysis of red-blood cells in dilutions of the order of 1:50,000. They combine with cholesterol to form insoluble double compounds which are nonhemolytic and nontoxic. Chemically, these glycosides comprise two groups: (1) The sterol glycosides such as digetoxin which is a heart stimulant, and (2) the triterpenoid glycosides with which we are concerned in legume feeds, such as beans, clover, and alfalfa. Both of these groups yield sapogenins (or saponenols) and sugars on hydrolysis.

Quantitative methods for determining saponins have not been perfected. However, the work that has been reported to date indicates that the triterpenoid saponins may be present in SOM to the extent of about 0.5 percent, which is of the same order as that indicated to be present in alfalfa. Japanese workers (24) pioneered the investigations on soy saponins and by 1940 they had shown that on hydrolysis four sapogenins along with glucose, galactose, rhamnose, arabinose, and glucuronic acid were obtained. They designated the sapogenins as soysapogenol A, B, C, and D. In 1950, Meyer, Jeger, and Ruzicka (25) published their work leading to the structure of these four soysapogenols.

Recent work at the University of Illinois (26) indicates that soysapogenol B is identical with one of the three sapogenins which they have isolated from alfalfa. The purified saponins from both alfalfa and soybeans inhibited the growth of chicks while their sapogenins did not. When purified soy saponins were fed to chicks at a level of 0.55% of a diet which contained adequate vitamin K extensive hemorrhaging was observed. Workers at the Western Utilization Research Branch in cooperation with Wayne University (27) have reported that saponins occur in Ladino clover as the calcium magnesium salts which do not combine with cholesterol to give insoluble compounds and do not hemolyze red-blood cells. These saponin salts do, however, cause a rapid loss of peristalsis with strips of rabbit intestines. Hydrolysis of the mixed saponins gave soysapogenol B (75%), soysapogenol C (20%), and a trace of what appeared to be soysapogenol A.

Workers in the U. S. Department of Agriculture (28) have recently shown that diets containing as little as 0.2% of purified alfalfa saponins inhibited the growth, diet consumption, and efficiency of diet utilization of chicks. They have also shown that the purified saponins can cause bloat in ruminant animals (29).

Peterson and his group (30) at the University of California studied the

growth-inhibiting effect of alfalfa on chicks. They have shown that the growth-depressing factor is stable to autoclaving and that it is counteracted by cholesterol and soy sterols. The addition of estrogens to the diet, which increased blood cholesterol, was without effect. They have added commercial saponin to a diet containing natural feedstuffs and obtained results directly parallel with those obtained with alfalfa diets. The study of growth inhibitors in natural feedstuffs is complicated by the fact that these same feeds contain unknown growth-promoting factors (31).

It is possible that saponins may be a factor in the poor nutritional quality of raw SOM. An attempt to extract saponins from autoclaved SOM was unsuccessful (26). It has been reported (32), that heating soy saponins in the presence of the meal destroyed their hemolytic activity while heating the purified saponins did not. Peterson's work (30) indicates that autoclaving alfalfa did not destroy the growth-inhibiting effect of saponins.

Since he was able to detoxify alfalfa by adding soy sterols, it follows that the sterol-saponin ratio in SOM may be important in developing the maximum nutritional value during the toasting operation. In this connection one might expect to find less sterols in solvent-extracted meal than in screw-pressed meal. It is of interest that Japanese workers (34) have reported that soy saponin A stimulated lactation in albino rats, rabbits, and women. This reported lactogenic effect should be studied with dairy cows.

(A complete bibliography will be carried at the end of Part II.)

Openings for Scientists

THE SOUTHERN Utilization Research Branch of the USDA Agricultural Research Service is seeking additional scientists for research to improve the utilization of Southern farm crops.

The research program of the Branch is far-reaching in scope including fundamental and applied research in the chemistry and utilization of cotton, vegetable oils, fatty acids, terpenes, and resin acids.

The current program offers excellent opportunities for chemists, biochemists, physicists, and cotton technologists interested in research. Vacancies currently exist at the Southern Branch's Southern Regional Research Laboratory, New Orleans, La., at entrance salaries ranging from \$3,670 to \$7,570 a year.

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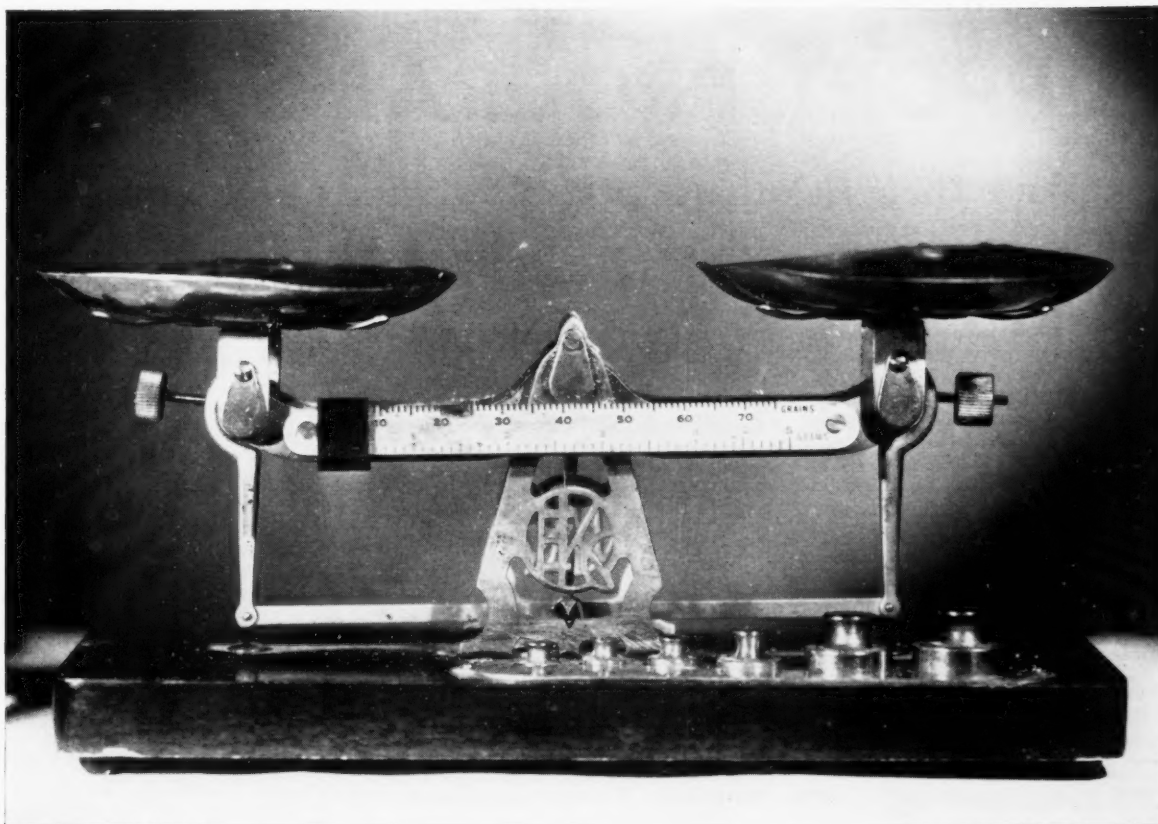
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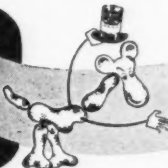
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SUPPORT PROGRAMS

And Their Relationship to Cottonseed and Soybeans

By J. E. THIGPEN

Director oils and peanut division, Commodity Stabilization Service; remarks before cooperative oil mill conference at New Orleans.

MY ASSIGNMENT today is to present remarks which may be used as a basis for discussion by this group of the subject, "Support Programs and Their Relationship on Cottonseed and Soybeans." Under this subject, I have been asked to discuss the following two topics:

1—Parity relationship for cottonseed and soybeans.

2—Possibility of continued exports of cottonseed and soybean oils and meal, as well as soybeans.

Parity Relationship

To facilitate discussion of the above topic, definitions are needed of the terms "parity" and "parity relationship."

"Parity" for soybeans and cottonseed is defined by law. It is determined under the so-called "Modernized formula." As determined, it reflects the average price relationships existing for soybeans and cottonseed during the most recent 10-year period. Thus, parity for the two oilseeds for any year constitutes a fixed relationship based on averages for the past 10 years.

In this discussion, "parity relationship" might be defined for illustrative purposes as that percentage of parity for cottonseed on the one hand and for soybeans on the other hand at which the two oilseeds can be supported without affecting in unduly different proportions the movement of their products into the market competitively. As thus defined "parity relationship" would depart from "parity," or the same percentage of parity for the two oilseeds, to the extent that it reflected their current market values relative to one another rather than the average for the preceding 10 years. Here the question immediately arises as to whether changes have occurred or factors exist which cause the current relative values to vary appreciably from the averages for the preceding 10 years.

Two major technological changes have occurred in recent years, one affecting relative processing costs and the other affecting relative demand for products of the oilseeds.

First, there has been almost a complete changeover to the solvent extraction method in the case of soybeans. This change has not taken place to anything like the same extent in the case of cottonseed. Consequently, the average efficiency in processing probably has increased more for soybeans than for cottonseed.

Second, improvement in the refining of soybean oil has made it more freely interchangeable with cottonseed oil. This reduces the premium which has existed in prior years in prices which refiners will pay for cottonseed oil as against soybean oil. A similar factor is the unrestricted use of soybean meal for feeding to a greater extent than in the case of cottonseed meal.

Probably the most important factor affecting the *parity relationship* for cottonseed and soybeans is the change in prices for the products of the two oilseeds. As the price of cottonseed hulls and linters goes down relatively, the value of products from a ton of cottonseed drops. Changes in the prices of protein meal and oil meal affect the values of both cottonseed and soybeans. The effect, however, is not the same. As the oil fraction of the seed increases in price the value of cottonseed increases relative to soybeans. As the meal fraction increases relative to oil, the value of soybeans increases relative to cottonseed.

This can be illustrated by calculating the prices for oil which would be required to return the 1956-crop support price for cottonseed and soybeans. These calculations are based on average yields of 916 pounds of meal and 325 pounds of oil per ton of cottonseed and 47 pounds of meal and 11 pounds of oil per bushel of soybeans, and include the estimated current value of near \$10 for cotton linters and hulls per ton of cottonseed.

With cottonseed meal at \$40 per ton and a processing margin (including transportation) of \$20 per ton for cottonseed, a price of 12.2¢ per pound for oil would result in gross product value equal to the support of \$48 per ton of cottonseed (f.o.b. gin).

With soybean meal at \$40 and a 20¢ per bushel processing margin (including transportation) for soybeans, a price of 12.8¢ for oil would

be required to give a gross product value equal to the support of \$2.15 per bushel.

With both meals at \$50 the comparable prices would be 10.8¢ for cottonseed oil and 10.7¢ for soybean oil.

With both meals at \$60 the comparable prices would be 9.4¢ for cottonseed oil and 8.6¢ for soybean oil.

If the assumed value of cottonseed linters and hulls should drop from \$10 to, say, \$6.75 per ton of cottonseed, then the price of cottonseed oil would need to be increased approximately 1¢ per pound. If the value of linters and hulls should increase, of course, the oil price would move in the other direction.

From the foregoing discussion, it should be evident that the 10-year average relationships of the parity prices for cottonseed and soybeans do not necessarily apply in 1956. The discussion indicates also that further changes may occur from time to time. It is extremely difficult to measure and evaluate these changes accurately or satisfactorily for any given year. Thus, neither parity nor a "parity relationship" established for any given year is likely to be "perfect" in its application. In connection with support for 1956, for example, the prospective smaller production of cotton and cottonseed may well result in a somewhat higher premium for cottonseed oil as against soybean oil. In relation to the definition of "parity relationship," stated earlier, this might justify a somewhat higher price support for cottonseed relative to soybeans than would be the case otherwise. At this point it may be well to turn to the second topic.

Possibility of Continued Exports

The supply-demand situation on fats and oils is changeable and complex. Before World War II this country was a large net importer of fats and oils. Currently, it is the world's largest exporter of fats and oils. Exports for the year beginning Oct. 1, 1954, set a new record. Exports during the current year likely will set another new record. The exports this year include large volumes of cottonseed and soybean oils and meals, as well as soybeans.



J. E. Thigpen

The recent large demand for and more widespread use of cottonseed oil, as well as soybean oil, has been stimulated by the deficit in production of sunflower seed in Argentina and olive oil in the Mediterranean Basin. It has been advanced also by operations under Public Law 480 which have made it possible for a number of countries to purchase and use more oil than would have been likely in the absence of funds made available under that law. The fact that cottonseed and soybean oils are being used in large volume tends to create a continuing desire on the part of consumers in various foreign countries for these oils. At the same time, continued operations under Public Law 480 should stimulate purchases.

Although soybeans have not been made available under Public Law 480, the desire of a number of countries to process the seed rather than to buy the products of the seed has resulted in large exports of beans. This preference is likely to continue and, therefore, to provide the basis for continued substantial exports of soybeans. Of course, the exports of soybeans and of cottonseed oil and soybean oil will be influenced by the supplies available and the prices in the United States in relation to world supplies and prices.

A year ago, there still was doubt and concern as to disposition of the surplus available for export above domestic requirements. Currently, the potential export demand seems to be fully as large as and probably a bit larger than the supply available for export above domestic requirements.

For the year ahead, it seems reasonable to expect some increase in production and supply relative to demand outside the United States. However, the supply available for the world as a whole is unlikely to exceed demand appreciably. Thus, assuming continuation of Public Law 480 operations, there likely will be a demand for the surplus available for export above U.S. domestic requirements for the year beginning Oct. 1, 1956.

Inoculated Crop Healthier

GOOD farmers inoculate seed to increase soybean yields. They know that inoculated legumes also enrich the soil with nitrogen which they get from the air.

Other benefits from inoculated soybeans and other legumes are just as valuable though less spectacular and less widely known. These include increased resistance to crop hazards, improved quality and a cleaner harvest, stated Dr. Joe C. Burton, director of research at the Nitragin Co., in a recent interview at his Milwaukee laboratories.

Soybeans and other legumes are famous for converting free atmospheric nitrogen into plant food for extra protein content and for soil enrichment. This tremendously important process can be accomplished, Dr. Burton emphasized, only with the help of the nitrogen-fixing bacteria which form the lumps called nodules on legume roots.

Crop Health

The soybean's heaviest demand for nitrogen occurs as seed begins to set. This late in the season, crop demands and leaching may have badly depleted other forms of this essential plant food. It is at this critical time, however, that the trillions of nitrogen-fixing bacteria in the root nodules shift into high gear, supplying the developing seeds with all the nitrogen they need.

Better health through improved nutrition helps upgrade market quality of seed. Because inoculation supplies plenty of nitrogen, and because nitrogen is the plant food that makes protein, inoculation can increase protein content of legumes by 20% or more.

Just as healthy men and animals are hardier and better able to withstand hardships, so healthier plants come through drought and wet spells in better condition, repair insect damage sooner, and are more resistant to disease.

Cleaner Harvest

Another little-known benefit of soybean inoculation, Dr. Burton said, is a cleaner harvest because inoculation helps the crop instead of the weeds. The new soybean grade standards make a clean, trash-free harvest more important than ever for top market price.

The mechanics of inoculation are simple and minute-quick. You mix inoculant with a bushel or two of seed in a tub or mortar box, on a tight floor or canvas. Big quantities of seed are easy to inoculate in truck box or cement mixer.

A proved method for soybeans is to put alternate layers of seed and

inoculant into a planter hopper. They will mix as the seed feeds through. It pays to use an extra amount of inoculant with any waterless method, especially under dry planting conditions.

Chemically Treated Seed

Occasionally some confusion occurs about the differences between chemical seed treatment and inoculation. These processes do two entirely separate jobs. Chemicals help prevent disease. Inoculation supplies the nitrogen-fixing bacteria that help legumes manufacture nitrogen fertilizer out of the air.

Chemically treated legume seeds need inoculation just as much as nontreated. The risk is that some chemicals may kill the inoculating bacteria. To avoid this chance of poor results, use chemicals that are labeled "safe for inoculants." Be sure to inoculate *after* applying the chemical and sow within a couple of hours. Here again, using extra amounts of inoculant will help assure good inoculation.

Should I Ever Skip Inoculation?

Not if you want top yields and maximum soil benefits. There may be some nitrogen-fixing bacteria in the soil but you can never be sure. There is no quick, simple soil test for nitrogen-fixing bacteria. Even if there were, it would take longer and cost more than inoculation.



NITROGEN INSURANCE. Soybeans do better when they make their own nitrogen fertilizer out of the air. But —the seed must be inoculated for maximum results. Soybean seed inoculation takes about 2 minutes, costs about 10c an acre.

CROP REPORT

Look for 11% Boost in Acreage

GROWERS intend to plant a record acreage of soybeans this spring if they carry out their intentions reported on Mar. 1, according to the U. S. Department of Agriculture. Indications point to 21.8 million acres to be planted alone for all purposes in 1956.

This is nearly 11% above the 19.7 million acres last year, the previous high.

If intentions are carried out and growers harvest the same proportion

for beans as in the last 2 years, about 20.2 million acres will be harvested. And yield will be about 410 million bushels, 39 million above last year's record, if an average yield is obtained.

The total acreage to be planted is still not settled, however. The government's support price for 1956-crop soybeans was announced well in advance of the time farmers reported their March intentions. But the degree of compliance with corn allotments and weather at planting time may affect the acreage planted to soybeans, USDA says.

The increase planned in soybean plantings is general in all producing areas ranging from a 9% increase in the South Central states to a 13% increase over last year in the South Atlantic states. The heavy producing North Central states expect an increase of nearly 11% over 1955. All producing states in this area expect increases except Nebraska which reported the same as last year and Kansas where a decline is indicated.

Sharp acreage increases are reported in both Minnesota and Iowa. The combined increase in the two states amounts to nearly a million acres or close to one-half the U. S. total increase over last year. Moderate increases of 6% are reported for Indiana and Illinois, while Missouri indicates a 5% gain.

In the South Atlantic area, where yields were relatively good in 1955, increases are expected in all producing states except in West Virginia. The sharpest increases are indicated for Delaware and Maryland. In the South Central area, increases are moderate in most states with decreases reported in both Kentucky and Oklahoma. The indicated acreage in Alabama is the same as last year.

1955 World Soybean Crop Was a Record

WORLD production of soybeans in 1955 is estimated by the Foreign Agricultural Service at 762 million bushels. This confirms the November forecast of a record crop, exceeding 1954 estimated output by 6% and average prewar production by 64%.

Four-fifths of the estimated 45-million bushel increase from 1954 occurred in the free areas of the world, with the United States alone accounting for 30 million bushels. One-fifth of the increase occurred in China-Manchuria.

While supplies of soybeans for the 1955-56 marketing year are large, world demand for edible oils and for oilseed cake and meal also is strong, and soybean prices have increased materially since early fall 1955, when they were the lowest in 5 years.

U. S. exports of both beans and oil have been running higher than a year ago and are likely to continue large throughout the remainder of the current crop year.

With a shortage of vegetable oils reported in China, the extent to which the estimated increase in China's production will be reflected in exports is uncertain. Northbound shipments of Chinese soybeans through the Suez Canal increased roughly 50% in calendar 1955, reaching 17.8 million bushels in the first 11 months.

Contrary to early expectations, soybean production in Canada increased 14% to a new alltime high of 5,650,000 bushels despite a 16% decline in acreage. This is the 12th successive year that soybean production has reached a new record, and last year's increase was due entirely to the new high of 26.4 bushels in the average yield per acre. It is reported that although the domestic market could absorb about double the volume of soybeans produced,

INDICATED SOYBEAN CROP PRODUCTION, March 1956

State	Acreage planted ¹		1956 as percent of 1955
	Average 1945-54	1955	
	1,000 acres	1,000 acres	Percent
N. Y.	8	7	80
N. J.	36	43	114
Pa.	49	48	115
Ohio	1,057	1,252	1377
Ind.	1,724	2,102	2,228
Ill.	3,840	4,432	4,698
Mich.	114	152	182
Wis.	71	100	110
Minn.	1,094	2,351	2,774
Iowa	1,747	2,170	2,734
Mo.	1,278	1,987	2,086
N. Dak.	23	80	108
S. Dak.	65	259	272
Nebr.	63	200	200
Kans.	383	374	340
Del.	68	86	110
Md.	90	141	169
Va.	191	232	264
W. Va.	15	7	6
N. C.	398	467	514
S. C.	92	190	213
Ga.	74	95	104
Fla.	16	40	44
Ky.	196	200	190
Tenn.	251	322	354
Ala.	168	165	165
Miss.	430	752	827
Ark.	581	1,205	1,350
La.	113	154	177
Okla.	54	50	45
Texas	6	6	9
U. S.	14,290	19,669	21,760

¹ Grown alone for all purposes. ² Short-time average.

Soybeans Meet the Mortgage

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I'LL SHOW YOU HOW TO HELP YOUR SOYBEANS MAKE EXTRA YIELD, GRADE HIGHER, THRESH OUT CLEANER, AND BENEFIT YOUR SOIL, TOO. COST YOU ABOUT A DIME AN ACRE.

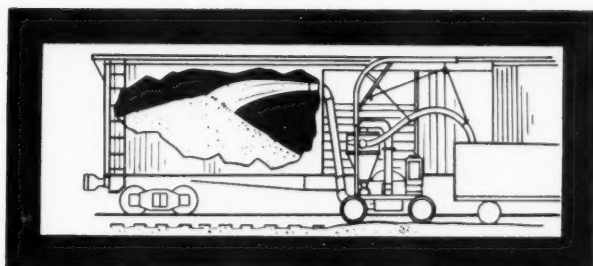
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considerable quantities probably will be exported, largely to the United Kingdom. The deficit is made up by imports of soybeans and soybean oil from the United States. In Canada, soybeans are produced commercially only in Ontario although efforts are being made to introduce the crop elsewhere, particularly in Manitoba.

Production in China-Manchuria is believed to have increased, possibly to 330 million bushels in 1955, compared with an unofficial estimate of 320 million the previous year. This volume of production would indicate that output has not regained the prewar average level of almost 360 million bushels.

Japan's harvest was reported at a near-record 18,200,000 bushels or one-third larger than the 1954 crop. Planted acreage was the same as in the previous year, but yields per acre were above average.

Production in Indonesia is unofficially estimated at about 15 million bushels. Output in Taiwan was reported at 882,000 bushels, up one-third from 1954.

The 4,136,000-bushel estimate of Brazil's crop indicates a decline of 4% from 1954. The bulk of the output was in Rio Grande do Sul. The recent erection of a large solvent extraction plant in Rio Grande do Sul for processing soybeans is likely to encourage soybean production in that area. There is a strong demand for edible oils in Brazil. Soybeans have not proved popular in states other than Rio Grande do Sul because of a shortage of mechanized equipment and competition from more profitable crops.

Soybean production in Africa is relatively insignificant. Nigeria with a production for export of 325,000 to

SOYBEANS: ACREAGE, YIELD PER ACRE, AND PRODUCTION IN SPECIFIED COUNTRIES AND THE WORLD, AVERAGES 1935-39 AND 1945-49, ANNUAL 1954-1955¹

Continent and Country	Acreage ²				Yield per acre				Production			
	Average 1935-39	Average 1945-49	1954	1955 ³	Average 1935-39	Average 1945-49	1954	1955 ³	Average 1935-39	Average 1945-49	1954	1955 ³
North America												
Canada	4 10	73	254	214	19.5	26.4	4 207	1,491	4,953	5,650		
United States ⁴	3,042	10,649	16,971	18,559	20.1	20.0	56,167	208,885	341,565	371,276		
Europe												
Italy	6	4	1	—	24.4	—	4 1	74	24	—		
Yugoslavia	5	15	3	—	15.0	—	71	155	48	—		
Other Europe	95	70	90	95	—	—	1,065	455	520	530		
U.S.S.R. (Europe and Asia)												
	7 607	—	—	—	—	—	7 5,805	—	—	—		
Asia												
Turkey	7 1	4 4	12	12	12.4	12.3	7 37	45	154	147		
China	12,411	11,256	—	—	—	—	207,666	190,248	180,000	330,000		
Manchuria	8,992	7,048	—	—	—	—	151,294	416,475	140,000	—		
Indonesia	8 889	7 872	—	—	—	—	9,731	7 9,736	14,567	15,000		
Japan	797	587	1,062	1,062	13.0	17.1	12,338	7,178	13,816	18,203		
Korea ⁹	41,921	583	637	—	8.8	—	17,654	4,984	5,628	—		
Taiwan (Formosa)	4 17	32	—	74	—	11.9	4 151	297	661	882		
Thailand	4 15	4 17	—	—	—	—	4 232	4 167	—	—		
South America												
Brazil ¹⁰	—	23	162	170	26.7	24.3	—	446	4,311	4,136		
Africa												
Tanganyika	—	—	—	—	—	—	—	40	—	21		
Union of South Africa	—	4 10	—	—	—	—	—	4 54	—	—		
Total excluding "Other Europe," U.S.S.R., Chinese Mainland and North Korea												
	5,670	12,940	20,835	22,380	—	—	87,185	234,150	387,575	422,190		
World total ¹¹	29,000	32,650	42,865	44,415	—	—	463,720	551,285	717,465	762,090		

¹ Years shown refer to years of harvest. Southern Hemisphere crops which are harvested in the early part of the year are combined with those of the Northern Hemisphere harvested the latter part of the same year. ² Figures refer to harvested areas as far as possible. ³ Preliminary. ⁴ Average of less than 5 years. ⁵ Acreage harvested for beans. ⁶ Less than 500 acres. ⁷ One year only. ⁸ Java and Madura only. ⁹ Beginning with 1948 figures represent South Korea only. ¹⁰ Rio Grande do Sul and Sao Paulo. ¹¹ Includes estimates for the above countries for which data are not available and for minor producing countries.

Foreign Agricultural Service. Prepared or estimated on the basis of official statistics of foreign governments, reports of agricultural attaches and other representatives abroad, results of office research, or other information. Prewar estimates for countries having changed boundaries have been adjusted to conform to present boundaries, except as noted.

350,000 bushels appears to be the major producer.

Another record world crop of soybeans may be produced in 1956. The present rising prices and strong domestic and export demand probably will encourage U. S. farmers to expand their plantings.

Canadian bean prices normally

follow closely prices in U. S. markets, so that farmers in Ontario, also in response to favorable prices and good demand, probably will increase their acreage.

And the Chinese government can be expected to continue to make efforts to step up production to meet increasing domestic demands as well as to effect an expansion in export markets.

Research Helped

"OUTSTANDING research discoveries in the fields of beef and swine nutrition were responsible for a large share of the significant increases in sales of these two types of feed last year," according to a statement by W. E. Glennon, president of the American Feed Manufacturers Association, Chicago. Glennon noted that increases of 16% in beef and sheep feed and 4% in swine were chalked up by the nation's manufacturers of branded feeds while decreases were noted in other types of commercial feeds.

Sales of dairy feeds were down 2%, broiler feeds down 2%, turkey feeds down 10%, other types of poultry feeds down 9%, scratch feeds down 16%, and miscellaneous feeds including such items as dog food, down 3%, according to AFMA.

Total production of commercial feed for last year was estimated at 33.6 million tons, 96% of a year earlier, according to the association.



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Sand, Iowa Soybean Pioneer, Has Gone

JOHNSAND, who helped pioneer the soybean crop in northwest Iowa, and who was a former member of the board of directors of the American Soybean Association, died at Phoenix, Ariz., Feb. 6 of leukemia. His home and seed business, Sand's Seed Service, were at Marcus, Iowa.

Mr. Sand started in the seed business about 1930 and in 1947 was responsible for building the firm's present seed plant.



John Sand

During the past 2 years the plant processed and handled about 150 carloads of seed soybeans and thousands of bushels of other seeds. Associated with him in the business were three of his four sons, Robert, Ray and Merle, and Bill Horstman, a son-in-law.

Mr. Sand was active in the Iowa soybean yield contest and furnished the John Sand trophy which was awarded the champion each year from the beginning of the contest until the present.

He was a member of the ASA board of directors for several years in the forties. He had cooperated with the U. S. Department of Agriculture on a soybean test plot for the last several years.

Etheridge Passes

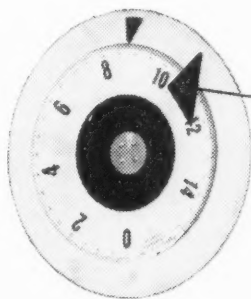
Dr. William Carlyle Etheridge, 70, retired chairman of the field crops department of the University of Missouri, died early in January following a heart attack.

His work in developing new crops for Missouri in nearly 40 years of teaching and research at the University had brought him nationwide recognition. Among the programs he directed was the introduction and improvement of soybeans in the state.

Suez Shipments

Northbound shipments of soybeans in November totaled about 881,840 bushels, considerably above the 183,720 bushels shipped in the same month in 1954, according to Foreign Crops and Markets, U. S. Department of Agriculture.

This brought the January-November total to 17.7 million bushels as compared with 11.5 million bushels shipped during the same period in 1954.



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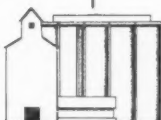
It may be a moisture pocket, a ball of weevils, insects, mold, or chaff and foreign material — could be germination — any of several *unknown, invisible conditions* which cause heating of grain . . . which in turn cost you money in down grading, loss of grain, unnecessary conditioning expense.

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PUBLICATIONS

Sensational Expansion in Minnesota

MINNESOTA. Expansion of the soybean crop in recent years in Minnesota can only be described as "sensational."

In 1955 Minnesota was actually in second place in the nation in harvested acres and size of crop—45 million bushels. But only 15 years ago production totaled an insignificant 800,000 bushels.

Among the factors that contributed to the rapid expansion of soybean production in Minnesota agronomists list the following:

1—Wartime and postwar needs for domestic oils.

2—Greatly expanded uses of soybean oil meal in livestock and poultry feeds.

3—Availability of new and improved varieties.

4—Realization that soybeans can be produced rather easily without costly additions to existing farm equipment.

5—Realization that soybeans can help smooth out the labor peaks during the production season.

6—The fact that soybeans can provide a cash crop which is often more profitable than barley, oats or flax.

Minnesota workers have completely revised Extension Bulletin 134 covering production, harvesting and storage of the crop, special uses and diseases.

SOYBEANS FOR MINNESOTA. By E. H. Jensen, J. W. Lambert, A. C. Caldwell and M. F. Kernkamp. Extension Bulletin 134, revised January 1956. University of Minnesota, University Farm, St. Paul 1, Minn.

WORLD TRADE. Committee for a National Trade Policy offers two programs about world trade on a hi-fi record for local radio broadcasts and organization meetings.

Purpose of the record is to help build understanding of U. S. foreign trade policies and to help build pub-

lic support for the Organization for Trade Cooperation.

On side one, Charles H. Percy, president of Bell & Howell Co., talks about a trade policy in the national interest with specific reference to his own industry.

On side two, Charles P. Taft, mayor of Cincinnati, talks about the General Agreement on Tariffs and Trade (GATT), what it is and what it has accomplished, and explains how the Organization for Trade Cooperation (OTC) would make GATT more efficient and more effective.

This is a high fidelity long playing 33 $\frac{1}{3}$ RPM record that can be used on home record players or by radio stations. Each side runs about 13 $\frac{1}{2}$ minutes. The record meets all technical specifications for broadcasting and one side will fit into a 15-minute radio period.

Suitable for luncheon meetings or study groups, for large or small audiences.

Price \$1.50. Committee for a National Trade Policy, 1025 Connecticut Ave., N. W., Washington 6, D. C.

HEXANE. Complete composition-temperature-specific gravity data for mixtures of any glyceridic oil with commercial hexane in a single tabulation have been published recently by scientists at the Southern Utilization Research Branch, Agricultural Research Service, USDA. Copies of the tabulation, which should be useful to oil chemists, engineers, and plant operators, are now available for distribution without cost.

Commercial hexane was the solvent chosen for use in compiling the tables because it is the one most commonly used in the oil processing industries, but with the basic information given similar tables could be constructed using any other solvent.

A copy of the tabulation, with instructions for its application, may be obtained without charge by writing to the Southern Regional Research Laboratory, 2100 Robert E. Lee Blvd., New Orleans 19, La.

Miscellaneous

PHASE BEHAVIOR IN THE SOLVENT WINTERIZATION OF CRUDE COTTONSEED OIL IN 85-15 ACETONE-HEXANE MIXTURE AS RELATED TO REDUCTION IN REFINING LOSS AND COLOR. Journal of the American Oil Chemists' Society, September 1955. Obtain reprints from the Southern Regional Research Laboratory, 2100 Robert E. Lee Blvd., New Orleans 19, La.

BOOKS

BLUE BOOK. Tenth anniversary edition of the Soybean Blue Book, soybean industry year book, was issued early in March by the American Soybean Association.

The 1956 edition of the Soybean Blue Book—first one was issued in 1947—comprises 160 pages and cover.

Assembled for quick reference are the latest available statistics on production, prices and utilization of soybeans, meal and oil. There are directories of soybean processors, oil refiners, and manufacturers using soy products in their operations, as well as firms offering their services and products to the soybean industry.

Included this year are full information about the revised federal grading standards and steps in soybean grading.

Copies were mailed to all members of the American Soybean Association. Additional copies will be mailed to members for \$1.

Price to nonmembers \$3, includes membership and subscription to the Soybean Digest.

Order from the American Soybean Association, Hudson, Iowa.

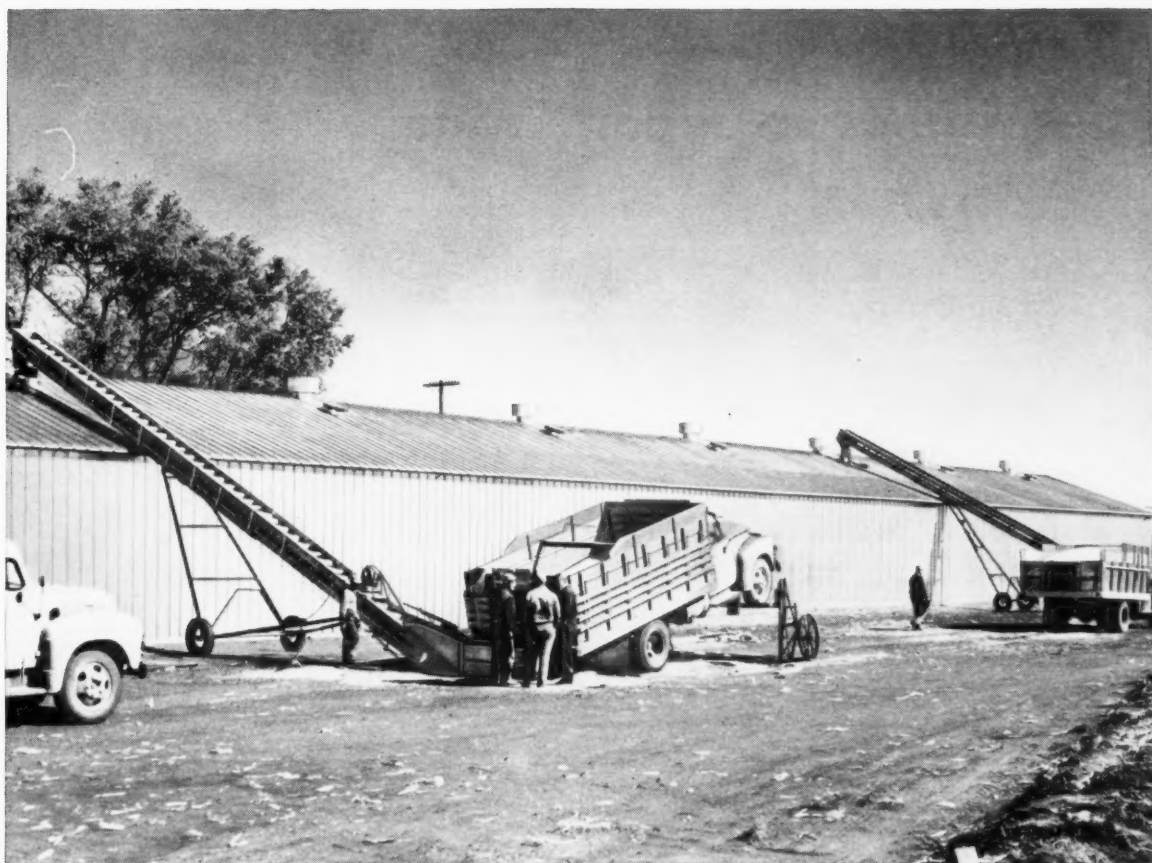
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See Threat to Japan Trade

JAPAN THREAT. Some concern is developing here over the possibility of the United States losing some of the Japanese soybean market, unless means can be found to increase total imports of that country.

Reports are again coming to USDA that a higher proportion of Japanese funds is being allocated for the purchase of soybeans from China, due in large part to the more favorable prices for which Chinese beans are now available.

At the same time, reports have circulated recently in the trade that China had been unable to deliver on a sale to Japan of 150,000 tons of soybeans.

George Strayer, executive vice president of ASA, reported from Japan late last fall that Japanese importers with a history of dealing with China apparently were to be favored over those whose normal dealings were with the United States. Officials say this is now beginning to appear in tangible form.

The Chinese not only have cut price, but have agreed to undertake improvement in quality, according to reports here. If so, and if the Chinese are able to make good on commitments, it could amount to a sizable part of the normal U. S. market to Japan.

Japan is our biggest buyer of soybeans. U. S. suppliers have been furnishing Japan with roughly 20 million bushels out of a total of

about 25 million in recent years.

In the neighborhood of 8 million bushels have moved from the United States during the first half of the Japanese fiscal year (April-September) and around 12 million bushels during the second (October-March) half of the fiscal year.

The United States apparently is in pretty good shape so far as Japanese purchases are concerned during the April-September period this year. Any serious reductions in potential exports to Japan would probably hit next fall and winter—just at the time of peak marketings of a big U. S. soybean crop.

Reports from Japan plus other situations may lead USDA officially to lower its estimate of soybean exports for the 1955-56 marketing year from 70 million bushels total to 65 million. This has been considered in recent meetings.

EXPORTS. Low prices for meal have resulted in some piling up of meal in Europe. It's doubted that any soybeans will be taken over by Commodity Credit Corp. this spring, since prices have been above support levels.

There is a feeling of caution on the part of most USDA men at this time. General attitude is that exports may slip a little in relation to a year ago this spring and summer; that to maintain exports at the rate of last year from now on out would be doing exceptionally well.



By **PORTER M. HEDGE**
Washington Correspondent for
The Soybean Digest

Inspections of soybeans for export during February and first half of March are reported 1.1 million bushels below the comparable period last year.

Total exports for the season so far, however, are approximately 7 million bushels ahead of last year. The figures are arrived at this way:

Bureau of Census has reported officially exports of 40,766,000 bushels during the October 1955-January 1956 period, inclusive. To this are added 4,210,000 bushels inspected for export during February and through Mar. 16.

Comparable figures for a year ago are 32,754,000 bushels exported in the October-January period, and 5,353,000 inspected for export during February through Mar. 18.

EDIBLE OILS. A fairly tight situation is expected to continue in edible vegetable oils during the spring and summer months until new crop oil is available.

Some further reduction in total stocks next October below a year ago is anticipated, though the cut may not be large.

At the close of February, a USDA report showed that contracts for approximately 346,610,000 pounds of cottonseed or soybean oil, or lard, were still active under the 480 export program. Since then agreements and purchase authorizations totalling 239 million pounds, partly for procurement in the coming fiscal year, have been announced.

The latter include 145 million pounds for Spain, 79 million pounds for Chile, 52.9 million of which is for procurement in the fiscal year beginning July 1, 1956, and 15 million for Korea.

Biggest part of the export business under Public Law 480 for this fiscal year has been announced. Some allocations are still to be announced, but they are mostly minor in amounts.

Bulk of new 480 export business in fats and oils is expected to be delayed until the October period when the new crop will be coming on.

architects, engineers and builders
of complete plants and units

**extraction and
processing
of vegetable oils**

developers of the Rotocel, installed capacity
exceeds 2,300,000 tons per year



BLAW-KNOX COMPANY Chemical Plants Division
Pittsburgh 22, Pennsylvania • Chicago 1, Illinois
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ASA Men on Japan Mission

ERSEL WALLEY, former president of the American Soybean Association, and currently a member of the board of directors, and Marion Hartz, vice president of Jacob Hartz Seed Co., Stuttgart, Ark., are now in Japan, where they will be in charge of an exhibit of soybeans and soybean products at the Osaka Trade Fair during the month of April.

Walley, who is president of Walley Agricultural Service, Fort Wayne, Ind., left this country by plane Mar. 19. He was in charge of the erection and staffing of the exhibit and is now meeting with Japanese trade groups of the soybean industry pertaining to a program of market development on soybeans under Public Law 480.

Hartz, who left April 5, took charge of the Osaka exhibit on his arrival in Japan.

The exhibit, sponsored jointly by the American Soybean Association and Foreign Agricultural Service of the U. S. Department of Agriculture, features the availability of American soybeans, the higher oil content as compared with shipments from other parts of the world, and demonstrates the place of soybean food products in supplementing the high rice diet of the Japanese people.

"Japan is already our No. 1 customer for American soybeans," Walley pointed out as he left for Seattle and Tokyo, "but the potential market in Japan is being only partially supplied. There is need for several times the present imports of soybeans as a source of fats and oil and protein.

As a purchaser of surplus agricultural commodities under Public Law 480 Japan has brought in wheat, rice, cotton and tobacco. A portion of the Japanese yen issued in payment for those commodities is to be used in further promotion and expansion of markets for agricultural commodities, and a proposed project to utilize some of those funds in analyzing the Japanese market and promoting expansion will be discussed by Walley with trade groups in the Japanese soybean industry.

Initiation of such study was instituted last November when Howard Kurtz, a member of the staff of Agricultural Marketing Service, USDA, in Chicago, and Geo. M. Strayer, executive vice president of the American Soybean Association, spent 6 weeks in Japan.

Included in the exhibit are a model soybean processing plant supplied by Blaw-Knox Co., Pittsburgh, Pa.; a soybean recleaning machine supplied by A. T. Ferrell & Co., Saginaw, Mich.; polyamide resin materials by General Mills, Inc., Kankakee, Ill.; industrial proteins and end products by the Glidden Co., Chicago, Ill.; bags of soy flakes and soybean

oil meal by the Honeymead Products Co., Mankato, Minn.; paints by Illinois Farm Supply Co., Chicago, Ill., and Monarch Paint Co., Peoria, Ill.; and food and protein products from Spencer Kellogg & Sons, Inc., and A. E. Staley Manufacturing Co., Decatur, Ill.

Also, samples of U. S. varieties of soybeans were furnished by: Jacob Hartz Seed Co., Stuttgart, Ark.; Farmer City Grain Co., Farmer City, Ill.; Sar Seed Farms, Charles City, Iowa; Sand's Seed Service, Marcus, Iowa; J. A. McCarty Seed Co., Evansville, Ind.; and Trisler Seed Farms, Fairmont, Ill.



Marion Hartz



ERSEL WALLEY as he left American Soybean Association headquarters to catch the plane for Japan.

HUGE PROFITS IN JULY SOYBEANS and SEPT. COFFEE

In **NOVEMBER 1955**, we picked **JULY SOYBEANS** and **SEPTEMBER COFFEE** as the 2 **BEST** commodities to **BUY** for **BIG PROFITS**. BOTH hit the "jackpot," **QUICK!**

JULY SOYBEANS—

Nov. 28, 1955—\$2.32

Feb. 27, 1956—2.71

SEPT. "B" COFFEE—

Nov. 25, 1955, bought at 41c lb.

Feb. 16, 1956, high was 55.40c

OUR STOCKS ALSO MADE HUGE PROFITS!

Gillette	bought at	.75 now	\$50.00
Goodrich	bought at	\$3.00 now	84.50
Kimberly			
Clark	bought at	8.75 now	50.00
Union Bag	bought at	7.50 now	42.00
Phillips Petro.	bought at	30.38 now	94.00
Cities Service	bought at	14.75 now	65.00
Wheeling Steel	bought at	11.25 now	53.75
Worthington	bought at	14.00 now	51.50

If **YOU** want to make money—**BIG MONEY**—out of **SOYBEANS—WHEAT—CORN—COFFEE—COTTON—STOCKS**—our twice-a-week **TUESDAY** and **FRIDAY** letters will give you **EXPERT ADVICE** backed by 38 years **EXPERIENCE**. We have been studying markets since 1918. Our service started business Feb. 1, 1928—now in **28th year!**

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SPECIAL "GET ACQUAINTED" OFFER: Our next 10 **TUESDAY** & **FRIDAY** letters, covering **ALL** markets mentioned above, also (**FREE**) our latest lists: 7-low-priced stocks; 7-high-quality stocks; 7 finest quality stocks—that should advance **MUCH** higher—**EVERYTHING** mentioned, \$2.00. — **USE ORDER FORM BELOW—NOW!**

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GRITS and FLAKES . . . from the World of Soy

Heads Staley Research

Dr. Thomas L. Gresham, who is resigning as director of organic chemicals and engineering research for the B. F. Goodrich Co., has been appointed vice president in charge of research and development for the **A. E. Staley Manufacturing Co.**, Decatur, Ill.



Dr. Thomas L. Gresham

Detailed plans for expansion of the Staley research program will be developed with the new vice president's supervision.

Lowell Gill, manager of the Staley research division, is nearing retirement age, but he will remain with the company for a period long enough to inaugurate the expanded research program. He has been with the Staley Co. for 40 years.

Swift Transfers

W. F. (Bill) Hendren, sales manager of **Swift & Co.'s**, Fostoria, Ohio, soybean mill, has been transferred to the company's Chicago general office, where he will work in the oil mill division. Maurice Huffer has replaced him.

Hendren has been with Swift & Co. 5 years. He was at the company's Champaign, Ill., mill prior to his sales managership at Fostoria.



W. F. Hendren



Maurice Huffer

Huffer, a veteran of 10 years with the company, spent his first 8 years coming up through the ranks at the company's Frankfort, Ind., mill. He has been at the Fostoria mill since 1954.

Joins Dickinson

Sherman Bond has joined the farm laboratory division of **Albert Dickinson Co.** to assist Lloyd T. Parr in the sales and management of Nodogen inoculator distribution.

Mr. Bond has been affiliated with the inoculant industry for 20 years.



Sherman Bond

He holds an M. S. degree in agricultural bacteriology and chemistry at the University of Wisconsin. He has worked with Dr. P. W. Wilson on "Mechanism of Biological Nitrogen Fixation," and is the author of numerous published articles, also holds a patent in the field of legume inoculation.

His efforts will be on sales and technical work in the field.

The Dickinson inoculator production and research will continue under the personal supervision of Dr. A. A. Hendrickson, chief bacteriologist since 1933.

Lewis C. Saboe, for many years state and federal agronomist in charge of soybean breeding in Ohio, is now extension agronomist in charge of crop improvement in the state. In addition, he serves as secretary-treasurer of the Ohio Seed Improvement Association.

A. T. Ferrell & Co., Saginaw, Mich., announces the appointment of three sales representatives. Henry M. Callis will serve North Carolina, South Carolina and Virginia. Lewis M. Sarr will cover Indiana, Illinois, southern Ohio and a part of New York state. Albert L. Mayer will have the territory of Maryland, Pennsylvania, New Jersey, Delaware and the eastern seaboard states north of New York.

Forms New Firm

Fred C. Lovitt has resigned as a partner in **L. B. Lovitt & Co.**, Memphis broker, effective April 1, and has organized the firm of **Fred Lovitt & Co.**, Mr. Lovitt announces.

The new firm will conduct cash and futures brokerage business in soybean oil, cottonseed oil and cottonseed meal. Office is located at 415 Cotton Exchange Bldg.

The firm will operate a private leased wire from the trading floor of the Memphis Board of Trade to the office of a clearing member of the Chicago Board of Trade. The firm is a member of the Memphis Board of Trade, Memphis Board of Trade Clearing Association and the American Soybean Association.

Pike Hybrid Corn Co., Pontiac, Ill., has been purchased by a group of present and former employees headed by Lloyd Wilken and John Waller from LeRoy A. Pike. Incorporated as Pike Seed Sales, Inc., the new owners will continue the operation without change. Mr. Pike, who is a director of the American Soybean Association, and his sons Robert and Fred will continue as producers of hybrid seed corn.

Construction of two 200,000-bushel feeder elevators, one in Lockport, Ill., and one in Seneca, to supply soybeans and grain to the **Glidden Co.'s** 6.5-million-bushel terminal elevator in Chicago is announced. They are scheduled to be in operation by the middle of September.

Complete warehousing facilities for Master Mix feeds of **McMillen Feed Mills** are being installed at 201 Fifth Ave., S.E., in Cedar Rapids, Iowa.

George R. Walter who has been manager of **Central Soya Co.'s** plant at Memphis, Tenn., will take charge of the firm's Gibson City, Ill., plant. He replaces Newell Wright, who has been promoted to assistant manager of the Central Soya barge and trucking division. New manager of the Memphis plant is Tom Marlow, who has been serving as personnel director at Gibson City.

"Unit Processes in the Fatty Oil, Soap and Detergent Industry" will be the theme for the eighth annual short course sponsored by the **American Oil Chemists' Society** at Purdue University, Lafayette, Ind., July 16-20. A roster of outstanding engineers and scientists from industry, universities, and research institutions will present papers of interest to workers in the field of edible fats and oils products, soaps, and detergents.

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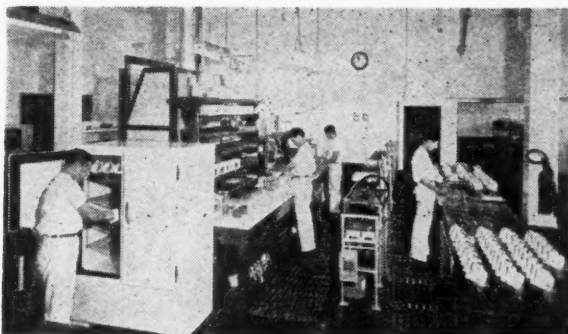
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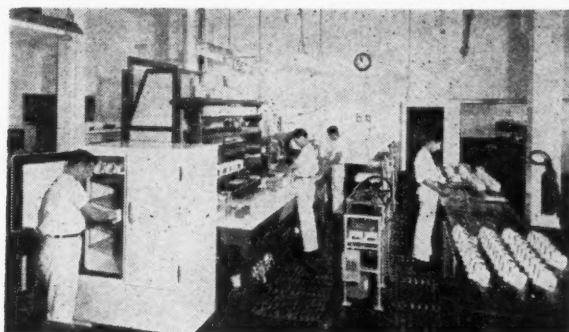
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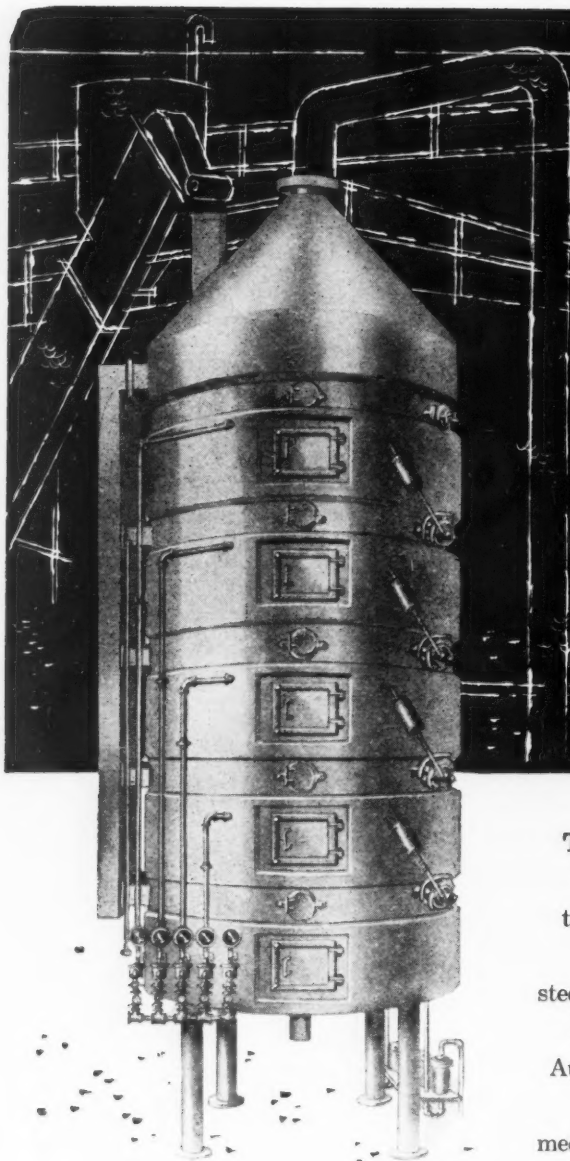
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NEW PRODUCTS and SERVICES

DISC HARROW. Allis-Chalmers Manufacturing Co. has added the No. 109 8½-foot double-action tractor-mounted disc harrow to its farm implement line. It is matched to the company's WD-45 and WD tractors.

The new disc harrow is available with either 28 16-inch smooth disc blades front and rear, or with 14 18-inch cut-away disc blades front and the same number and size smooth disc blades rear.



This new disc features the flexible "back-bone" frame member originally introduced by Allis-Chalmers. This provides a semi-rigid harrow for best penetration, yet permits the entire frame to flex for thorough discing over uneven ground.

For further information write Soybean Digest 4e, Hudson, Iowa.

PROCESSING. V. D. Andersen Co. announces a new four-page folder describing some of its latest processes including Disolex, a direct solvent extraction process with universal application; Anderson grain expanding process for converting cereals into more digestible products; and Anderson feather dryers which revolutionize the production of feather meal for feed supplements.

Along with a general description of the Disolex process, this bulletin gives typical Disolex results on cottonseed and other products.

For further information write Soybean Digest 4f, Hudson, Iowa.

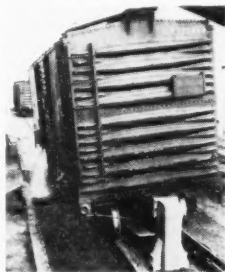
V-BELT DRIVE. The origin, history and development of the modern multiple V-belt drive are discussed in a new 36-page pocket size booklet released by Allis-Chalmers Manufacturing Co.

The booklet also covers the evolution of standards in engineering V-belt drives, tells how to engineer a V-belt drive, provides tables and data, and describes modifications in V-belt drives.

Copies of "Modern Multiple V-Belt Drives," 20E8297, are available on request from Soybean Digest 4b, Hudson, Iowa.

BOXCAR UNLOADER. Oscillating motion is now being utilized to empty grain and other free-flowing bulk materials from railroad boxcars at the rate of four carloads per hour, according to Link-Belt Co.

The new unit, known as the "Kar-Flo," takes a standard railroad boxcar weighing up to 150,000 pounds loaded, locks it in its grasp on a steel structure, and then, by means of a gentle oscillating or rocking motion of only 3 inches at the ends of the car, empties the load.



An entirely new concept in boxcar unloading, the Kar-Flo is safer and faster than manual unloading. The entire unit can be installed in a pit only 7 feet 3 inches deep.

For further information write Soybean Digest 4d, Hudson, Iowa.

CONVEYORS. Seedburo Equipment Co., exclusive distributor for Hytrol conveyors for handling bags, boxes, cases and cartons, offers a 12-page illustrated brochure covering this line.

The distributorship applies to the grain, feed, seed and allied trades.

Write Soybean Digest 4c, Hudson, Iowa, and ask for brochure No. H-545.

THE SOYBEAN PROCESSORS' GUIDE to MARKET DEVELOPMENTS IN OILSEEDS AND PRODUCTS

Daily Market Report

Covering Developments in Soybeans, Soybean Oil and Meal, and Other Oils, Meals and Fats.

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**EARN TOP
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Here are five good reasons why the 7-foot Case "75" Combine will help you avoid dockage, earn top market prices for your soybeans:

1. **Straight-in-line header** cuts wide enough to handle two big, bushy rows easily, even when plants are badly lodged.
2. **Big 28-inch cylinder** keeps straw thick enough to cushion beans against damage. Spike teeth increase capacity . . . let you operate the cylinder at slower, more gentle speeds.
3. **Stretch-out straw rack** is extra long for maximum separation. Vigorous action shakes out every bean into full-length grain pan.
4. **Famous Case Air-Lift Cleaning** maintains constant air pressure under sieve to float off chaff and dirt. Pressure controlled easily by quick-change fan speeds. (Roto-Cleaner available.)
5. **Six-inch sump-type elevator** with cup-type flights. Moves beans fast enough to avoid clogging, gently enough to avoid damage.

See your Case dealer. Ask about the flexible Case Income Payment Plan. J. I. Case Co., Dept. D-756, Racine, Wis.

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- MARKET STREET -

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

Rate 10c per word per issue. Minimum insertion \$2.00.

PERFORATED METAL — CAN supply round hole and slotted zinc material for all makes soybean cleaners. Pioneer Fanning Mill Co., 1328 North Second St., Minneapolis, Minn.

FOR SALE: ROANOKE, LEE, Jackson, Ogden, Clemson, **JEW-45,** Nanksoy, S-100, Woods Yellow, Black Wilson and other varieties select and certified seed soybeans. Also a complete line of field and pasture seeds. Gurley Milling Co., seed dept., phone 2303, Selma, N. C.

FOR SALE — FLAKING AND cracking rolls, meal toasters, filter presses, hammer mills, Anderson 14-inch conditioners, 36-inch cookers. Pittcock & Associates, Glen Riddle, Pa.

BAG CLOSERS: FISCHBEIN portable bag closers in stock for immediate shipment. Write for circular and prices. Douglas L. Mains Co., 1034 College Ave., Wheaton, Ill. Phone Wheaton 8-7474.

BINS FOR SURPLUS STORAGE. Overcome your lack of storage space with government-type grain bins, 18 x 16 feet, 3,250 bu. level full, approx. 3,500 bu. heaping full capacity. Write for attractive prices. Midwest Steel Products Co., Railway Exchange Bldg., Kansas City 6, Mo.

WANTED TO BUY — YOUR EMP- tied burlap and cotton sacks. Tie in bundles and ship to us. Top prices paid. Sterling Bag & Burlap Corp., 41 Carolina St., Buffalo 1, N. Y.

FOR SALE—ONE ARID-AIRE grain drier, one Allis Chalmers 2 high roller mill, two 5 cooker high French presses, one Sperry filter press, one 100 HP Kewanee boiler and stack, one Schaub heat exchanger, one Ormsby stoker, one Anderson grain drier. Address inquiries to Soybean Digest, Box 319I, Hudson, Iowa.

FOR SALE—NEW AND REBUILT Tag meters, guaranteed. We buy used Tags regardless of condition. Grain thermometers, USDA Specs. for sale. Garden City Instruments, Inc., Room 1120, Transportation Bldg., Chicago 5, Ill.

SEED DIRECTORY

ALABAMA

Northport—J. Lewis Harper, 800 bu. certified Jackson.

ARKANSAS

Burdette—G. A. Hale, Hale Seed Farms, 5,000 bu. registered Hale Ogden No. 2.

Harrisburg—W. D. Thomas, Box 545, 3,300 bu. certified Lee, 2,200 bu. uncertified Lee.

Morrilton—Stallings Bros. Feed Mills, P. O. Box 168, 2,600 bu. certified Lee, 6,000 bu. uncertified Ogden.

Stuttgart—Jacob Hartz Seed Co., Inc., P. O. Box 109, certified Lee, certified Jackson, certified Dorman, uncertified Ogden, uncertified Volstate, uncertified J. E. W. 45.

ILLINOIS

Camp Point—Moore Seed Co., 2,800 bu. certified Clark; 1,800 bu. certified Harosoy.

Emden—Boerma Bros., 2,400 bu. certified Clark.

Mansfield—C. Leslie James, Rt. 1, 1,200 bu. certified Clark.

Metamora—Ezra Schlupf, 4,000 bu. registered Clark.

Prophetstown—Clyde G. Chamberlain, Rt. 1, Box 202, 1,200 bu. certified Harosoy.

Saunemin—Ben Wiegand, 1,100 bu. certified Harosoy.

Ursa—Frank W. Lewis & Son, Box 42, 400 bu. certified Perry, 2,000 bu. certified Clark, 1,200 bu. certified Harosoy, all in new 1½ bu. bags.

Villa Grove—Turner Seed & Supply, 3,000 bu. reg. certified Hawkeye, 6,000 bu. reg. certified Lincoln, 1,000 bu. reg. certified Clark.

INDIANA

Amboy—Lowell G. Pence, Rt. 1, 1,500 bu. certified Harosoy.

Evansville—J. A. McCarty Seed Co., 526 N. W. Fourth St., certified and uncertified Clark, certified and uncertified Wabash, uncertified Perry.

Poneto—Fred Grover, Rt. 1, 1,000 bu. certified Lincoln, 1,750 bu. certified Clark.

Valparaiso—Wyckoff Hybrid Corn Co., 1,500 bu. certified Harosoy, 300 bu. certified Blackhawk, 1,500 bu. uncertified Monroe.

IOWA

Charles City—Sar Seed Farms, 804 N. Main, 600 bu. certified Blackhawk.

Marcus—Sand's Seed Service, 5,000 bu. certified Hawkeye, 30,000 bu. non-certified Hawkeye, 1,000 bu. non-certified Adams, 1,000 bu. non-certified Lincoln, 600 bu. certified Chippewa.

KANSAS

Reserve—Harvey L. Armstrong, 250 bu. certified Clark.

MICHIGAN

Dundee—Russell Houpt, Rt. 1, 800 bu. certified Harosoy, 400 bu. certified Blackhawk.

Ottawa Lake—Edward Brodbeck, 7726 Yankee Road, 1,000 bu. certified Chippewa.

MINNESOTA

Fairmont—J. H. Schrooten, Rt. 1, 700 bu. certified Chippewa.

Hartland—Sig Barge & Son, 70 bu. Chippewa, 100 bu. Ottawa Mandarin, 60 bu. Renville, 150 bu. Blackhawk, all certified first generation.

Lake Crystal—Wayne Othoudt, 600 bu. certified Chippewa, 120 bu. certified Ottawa Mandarin, 150 bu. certified Blackhawk, 150 bu. uncertified Renville.

Sacred Heart—Enestvedt Bros., 1,000 bu. reg. and certified Renville, 1,000 bu. reg. and certified Blackhawk.

St. Peter—Art Norell & Son, Rt. 3, 400 bu. certified Chippewa.

West Concord—Victor Emerson, 250 bu. certified Chippewa.

MISSISSIPPI

Gunnison—Boyd Lane Plantation, 500 bu. certified Roanoke.

Hattiesburg—Leo W. Klarr, Ellkay Farms, Rt. 1, 2,500 bu. certified Jackson.

Hollywood—Bard Selden, 5,000 bu. certified and uncertified Lee.

Ruleville—T. L. Milburn, P. O. Box 4, 6,000 bu. certified Roanoke.

MISSOURI

Caruthersville—J. H. Hutchison, Jr., Hutchison Farms, 3,000 bu. certified Dorman, 1,000 bu. certified Ogden.

Eureka—Emil L. Wallach, 1,000 bu. certified Perry.

Jamesport—Farmers Produce Co., 15,000 bu. Clark, first year from certified, 2,000 bu. blue tag certified Clark.

Louisiana—Farm Supply Co., 3rd and Alabama Sts., 1,000 bu. certified Clark, 2,000 bu. certified Harosoy.

St. Louis 2—Cypress Land Farms Co., 314 Merchants Exchange Bldg., 5,000 bu. uncertified Clark, 5,000 bu. uncertified Ogden, 5,000 bu. uncertified Dorman, 2,000 bu. uncertified Perry.

NEBRASKA

Beaver Crossing—Marvin Cast, Rt. 2, 700 bu. certified Clark.

St. Libory—Henry Schutz, 200 bu. Nebraska certified Hawkeye.

Wood River—Lloyd Boeka, 200 bu. certified Harosoy; 500 bu. certified Hawkeye; 1,500 bu. certified Adams.

NORTH CAROLINA

Aberdeen—D. P. Troutman, 840 bu. N. C. registered Lee, 450 bu. N. C. certified Lee.

Bladenboro—A. W. Shaw, Rt. 2, Box 47, 1,000 bu. certified Lee.

Raleigh—Robert H. Morrison, Jr., 403 Brooks Ave., 200 bu. certified Lee, 100 bu. certified Jackson.

Selma—Gurley Milling Co. of Selma, N. C., Inc., P. O. Box 488, 1,000 bu. uncertified Wood's Yellow, 2,000 bu. uncertified mixed hay beans, 10,000 bu. uncertified Roanoke, 1,000 bu. certified Roanoke, 5,000 bu. uncertified Ogden, 1,000 bu. certified Ogden, 5,000 bu. uncertified Lee, 10,000 bu. certified Lee, 5,000 bu. uncertified Jackson, 2,000 bu. certified Jackson, 10,000 bu. uncertified Clemson, 10,000 bu. uncertified J.E.W. 45, 1,000 bu. uncertified Nanksoy, 1,000 bu. uncertified S-100, 1,000 bu. uncertified Early Wood's Yellow, 1,000 bu. uncertified Tokyo, 1,000 bu. uncertified Yelando, 2,000 bu. uncertified Biloxi, 5,000 bu. uncertified Otootan, 15,000 bu. uncertified Black Wilson.

NORTH DAKOTA

Leonard—Edw. F. Manthei, Rt. 1, 2,000 bu. certified Hardome.

OHIO

Covington—Ebberts Field Seed Co., Rt. 2, 5,000 bu. certified Hawkeye.

OKLAHOMA

Grove—Walter L. Manning, Rt. 1, 175 bu. certified Dorman.

ONTARIO

Chatham—St. Clair Grain & Feeds, Ltd., Box 330, 600 bu. registered No. 1 Hardome, 3,000 bu. registered No. 1 Harosoy.

IN THE MARKETS

FACTORY USE VEGETABLE OILS, for December and January. Reported by Bureau of the Census (1,000 lbs.)

Primary Materials: Factory Production and Consumption, and Factory and Warehouse Stocks, January 1956 December 1955.

	Factory production		Factory consumption		Factory and warehouse stocks	
	Jan. 1956	Dec. 1955	Jan. 1956	Dec. 1955	Jan. 31, 1956	Dec. 31, 1955
Cottonseed, crude	231,041	226,931	189,248	199,941	192,547	192,182
Cottonseed, refined	174,915	185,720	123,015	117,038	1416,904	1378,216
Soybean, crude	270,046	261,550	258,148	250,130	137,246	138,232
Soybean, refined	239,846	232,155	238,205	234,323	81,682	79,686
Vegetable foots (100% basis)	22,192	25,017	12,787	11,851	50,455	45,288

¹Includes 91 million pounds of cottonseed oil as reported by respondents to the Census Bureau as owned by Commodity Credit Corp. This figure, as well as the comparable Dec. 31, 1955, figure of 101 million pounds (revised) includes quantities sold for export by CCC but not "lifted" but excludes quantities sold by CCC for export and being further processed. As of Jan. 31, 1956, CCC reported no quantities of refined cottonseed oil as being removed from inventory and put in an "in-transit position to other storage."

Factory Consumption of Vegetable Fats and Oils, By Uses, During January 1956

	Edible products			Inedible products			
	Shortening	Margarine	Other edible	Soap	Paint & varnish	Lubricants & similar oils	Other inedible
Cottonseed, refined	14,073	4,944	2,218			(2)	370
Soybean, crude				67	306	6	2,212
Soybean, refined	38,411	6,676	9,957		7,515	53	7,512
Foots, vegetable, raw and acidulated (100% basis)				2,151	155	(2)	857
Hydrogenated vegetable oils, edible:							
Cottonseed	15,380	26,264	1,586				
Soybean	32,472	64,389	1,132			(2)	

¹Includes quantities consumed in lubricants, greases, cutting oils, dielectric oils, core oils, brake fluids, and metal working.
²Not shown to avoid disclosure of figures for individual companies

Consumption of Primary Fats and Oils in Fat Splitting January-December, 1955

	Jan.	Feb.	Mar.	Apr.	May	June
Vegetable						
Coconut, crude	1,736	3,131	3,440	2,600	4,266	2,947
Other vegetable oil ¹	1,749	1,747	1,449	1,707	2,383	2,901
Total vegetable	3,485	4,878	4,889	4,307	6,649	5,848
Soapstocks						
Vegetable foots	9,324	7,621	10,100	9,925	9,789	12,061
Vegetable						
Coconut, crude	2,880	3,024	3,723	3,503	4,217	4,814
Other vegetable oil ¹	2,661	1,483	1	2,134	1,493	243
Total vegetable	5,541	4,507	3,723	5,637	5,710	60,231
Soapstocks						
Vegetable foots	7,552	9,790	9,126	11,723	10,708	7,868

¹ Not shown separately to avoid disclosure of individual operations. U. S. Census Bureau.

Consumption of Primary Fats and Oils in Fat Splitting 1956

	1956 Jan.	1955 Dec.	1956 Jan.
Vegetable			
Coconut, crude	4,645	4,814	1,736
Other vegetable oil ¹	614	243	1,749
Total vegetable	5,259	5,057	3,485
Soapstocks			
Vegetable foots	8,504	7,868	9,324

¹ Not shown separately to avoid disclosure of individual operations. U. S. Census Bureau.

PRICES. Average prices received by farmers, effective parity, and support rates (dollars per bu.)

	Average farm price	Effective parity	Av. price as per cent of parity	National average price support rate
Feb. 15 1955	Jan. 15 1956	Feb. 15 1956	Feb. 15 1956	Feb. 15 1956
2.61	2.19	2.25	2.86	79
				2.22
				2.04
				2.15

Average farm and parity prices from crop reporting board.

LOANS. Quantity of 1954- and 1955-crop soybeans put under price support, by states (1,000 bu.)¹

	1954 crop	1955 crop ²		1954 crop	1955 crop ²
Ala.	40	35	Mo.	2,202	2,300
Ark.	124	776	Nebr.	320	94
Del.	8	4	N. J.	4	1
Fla.	6	3	N. Y.	1	1
Ga.	2	28	N. C.	24	38
Ill.	6,889	4,787	N. Dak.	180	243
Ind.	1,893	1,291	Ohio	1,272	728
Iowa	16,395	9,645	Okla.	13	36
Kans.	100	71	Pa.	3	3
Ky.	92	46	S. C.	29	352
La.	4	5	S. Dak.	488	216
Md.	3	5	Tenn.	123	269
Mich.	45	62	Tex.	1	3
Minn.	11,050	8,582	Va.	0	2
Miss.	70	345	Wis.	34	20
			Total	41,415	29,988

¹Soybean loans and purchase agreements available through Jan. 31. ²Reported as of Feb. 15. ³Less than 500 bushels.

1955-crop soybeans put under price support and loans outstanding as of Feb. 15. (1,000 bu.)

	Quantity put under loan	Quantity of loans outstanding ¹	Purchase agreements	Total put under support 1955-56 ²
Farm stored	Warehouse stored	Total		
14,432	12,954	27,386	2,602	29,988

¹ The difference between the total quantity placed under loan and the total quantity outstanding is for all practical purposes the quantity redeemed. ² Total placed under price support is the sum of the total put under loans and purchase agreements. Agricultural Marketing Service.

STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday and Saturday preceding date of report (1,000 bu.)

	Feb. 28	Mar. 6	Mar. 13	Mar 20
U. S. Soybeans in Store and Afloat at Domestic Markets				
Atlantic Coast	1,783	1,806	1,917	1,923
Gulf Coast	3,693	3,854	3,659	3,790
Northwestern and Upper Lake	4,839	4,934	5,143	5,198
Lower Lake	7,357	7,562	7,758	8,022
East Central	1,939	1,875	1,808	1,577
West Central Southwestern & Western	2,264	2,237	2,130	2,042
Total current week	21,875	22,268	22,415	22,552
Total year ago	5,789	5,531	4,793	4,604
U. S. Soybeans in Store and Afloat at Canadian Markets				
Total current week	587	547	533	493
Total year ago	197	152	103	102
Total North American Commercial Soybean Stocks				
Current week	22,462	22,815	22,948	23,045
Year ago	5,986	5,683	4,896	4,706

Primary Receipts (1,000 bu.) of Soybeans at Important Interior Points for the Week Ending:

	Feb. 24	Mar. 2	Mar. 9	Mar. 16
Chicago	442	758	603	547
Duluth	33	50	85	27
Indianapolis	27	24	34	33
Kansas City	82	136	127	81
Minneapolis	161	237	187	135
Omaha	40	22	82	115
Peoria	118	103	95	159
Sioux City	28	34	26	7
St. Joseph	55	58	47	48
St. Louis	14	31	20	23
Toledo	142	127	160	101
Totals	1,142	1,590	1,466	1,276
Last year	420	553	354	553
Total Chicago soybean stocks	9,341	6,434	6,638	6,878

EXPORTS. U. S. exports of soybeans and soybean oil for January. Preliminary data by Foreign Agricultural Service.

Soybeans	6,453,945 bu.
Soybean oil:	
Crude	1,126,020 lbs.
Refined but not further processed	15,594,865 lbs.
Refined, deodorized and hydrogenated	30,668,561 lbs.

Converted to a soybean equivalent basis the exports for January amounted to 11,022,729 bushels.



For Largest Cattle Feeding Operation in Kansas

New 350,000 bushel Bolted Steel ELEVATOR-MIXER

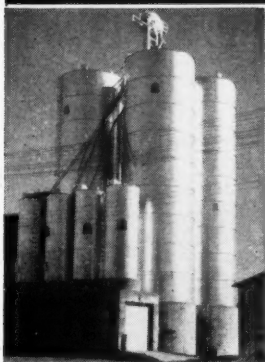
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These 12' x 40' Columbian mixing tanks with steel hoppered bottoms provide an efficient drive-through feed mixing operation for Emporia Elevator & Feeding Co.



Classifying and blending grains is becoming more and more the country elevator operators' problem. A typical answer is found in the McKenna Grain Company Columbian elevator tanks at Kingman, Kansas. Erected in 1955, this 90,000 bushel installation is equipped with 12' x 24' Columbian classifying tanks.



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Combining wheat and grain storage with the feeding of 10,000 head of cattle is a profitable operation for Emporia Elevator & Feeding Co. of Emporia, Kansas. The new Columbian 350,000 bushel bolted steel grain elevator and mixing equipment enables this enterprising company to store grain and tailor-mix their cattle feed economically and efficiently. The ten 26' x 72' bolted steel tanks were erected in time for the 1955 Kansas wheat harvest. Columbian engineers also made the preliminary drawings, designed foundations and installed the mixing tanks and equipment. The elevator is designed for easy expansion by adding tanks.

Whether you need a single tank or a complete elevator installation, you can depend on Columbian for durable, economical, tight bolted steel tanks and efficient grain handling equipment. Columbian tanks, because of their strength and tightness have also been widely adopted for storing dehydrated alfalfa under inert gas pressure. Thousands are in use for storing grains, seed, coffee, rice, peas and beans.

COLUMBIAN STEEL TANK CO.

P.O. Box 4048-U

Kansas City, Mo.

STEEL, Master-Crafted by Columbian... First for Lasting Strength

Soybeans: Inspections for overseas export by ports and country of destination Feb. 20-Mar. 16. Reported by Agricultural Marketing Service (1,000 bushels)

	Phila- delphia	Balti- more	Norfolk	New Orleans	Mobile	Total
Japan		172,429	59,139	233,352		464,920
Belgium			18,667			18,667
Holland			24,267	147,745		172,012
United Kingdom			18,667			18,667
Denmark	93,004					93,004
Hong Kong	833					833
Korea				128,138		128,138
Formosa				104,720		104,720
Norway			186,667			186,667
Germany					414,210	414,210
Total	93,837	172,429	307,407	613,955	414,210	1,601,839

Oilseed cakes and meals: Imports and exports, October through December (short tons)

	Imports		Exports	
	1954	1955	1954	1955
Soybean	0	0	109,767	141,532
Cottonseed	4,683	7,895	45,190	110,029
Linseed	0	0	32,221	64,737
Peanut	0	0	0	795
Copra	16,904	13,562	—	—
Other	852	1,047	0	0
Total	22,439	22,504	187,178	317,093

FEEDSTUFFS. Consumption of oilseed meals for the first quarter of the 1955-56 season increased by about 170,000 tons and totaled 2,613,000 tons, reports Agricultural Marketing Service. With the exception of last season, consumption was the smallest since 1950.

Production of oilseed meals increased by over 320,000 tons while exports totaling 317,000 the first quarter were 130,000 tons more than last season. Imports of oilseed meals at 22,500 tons were about the same as a year ago.

Consumption of soybean oil meal at 1,534,100 the first quarter was about 145,000 tons more than the comparable period of 1953 and 1954 but was about the same as the comparable quarter in 1950, 1951 and 1952.

Consumption of cottonseed meal was about 40,000 more than a year earlier but consumption of other oilseed meals was slightly below last year.

Feedstuffs: Supplies for feed					
Oct.-Dec. 1955 with comparisons ¹ (1,000 tons)					
	Oct.-Dec. 1954	Oct.-Dec. 1955	Oct.-Sept. 1953-54	Oct.-Sept. 1954-55	Oct.-Sept. 1955-56 estimated
Oilseed cakes and meals					
Soybean	1,388.6	1,534.1	4,964.9	5,425.6	5,900.0
Cottonseed	856.3	893.9	2,925.5	2,404.7	2,450.0
Linseed	142.0	138.8	526.5	486.7	500.0
Peanut	6.4	3.3	62.8	17.7	70.0
Copra	50.9	42.9	196.5	181.9	180.0
Total oilseed meals	2,444.2	2,613.0	8,676.2	8,516.6	9,100.0

¹ Stocks and foreign trade statistics, when available, used in calculating supplies.

SUPPLY AND DISTRIBUTION of the 1953-55 soybean crops, reported by Agricultural Marketing Service (1,000 bu.)

	1954-55	1955-56
Carryover ¹	1,336	9,957
Production	341,565	371,276
Total supply ²	342,901	381,233
Farm use including seed for season	26,000	27,000
Quantity remaining for processing, export or carryover	316,901	354,233
Disappearance through Jan. 31 ³ :		
Crushed for oil or processed ⁴	86,597	99,096
Exported	32,426	42,312
Total	119,023	141,408
Balance on Feb. 1 for processing, export or carryover	197,878	212,825

¹ Stocks as of Oct. 1. ² Imports negligible. ³ October through January. ⁴ No allowance is made for new crop crushings prior to Oct. 1.

SHORTENING. Standard shortening shipments reported by the Institute of Shortening and Edible Oils, Inc., in pounds.

Feb. 18	5,575,306
Feb. 25	4,234,192
Mar. 3	4,561,519
Mar. 10	3,770,475
Mar. 17	4,105,272

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PROCESSING OPERATIONS. Reported by the Bureau of the Census for January and February 1956.

Primary Products Except Crude Oil at Crude Oil Mill Locations:
Production, Shipments and Transfers, and Stocks,
February 1956-January 1956 (2,000 lbs.)

	Production		Shipments and transfers		Stocks end of month	
	Feb. 1956	Jan. 1956	Feb. 1956	Jan. 1956	Feb. 29 1956	Jan. 31 1956
Soybean:						
Cake and meal	563,223	567,037	525,660	533,502	137,487	99,924
Flour	9,820	11,057	9,921	11,536	2,121	2,222
Lecithin	2,639	2,925	N.A.	N.A.	3,615	3,839

Soybeans: Net Receipts, Crushings, and Stocks at Oil Mills, by States, February 1956-January 1956

State	Net receipts at mills		Crushed or used		Stock at mills	
	Feb. 1956	Jan. 1956	Feb. 1956	Jan. 1956	Feb. 29 1956	Jan. 31 1956
U. S.	618,171	493,344	735,341	733,355	2,125,829	2,213,499
Illinois	246,092	185,306	286,980	268,108	731,592	772,480
Indiana	48,140	52,674	68,912	80,485	221,343	242,115
Iowa	151,520	114,130	122,253	131,684	267,517	238,250
Kansas	(1)	1,651	(1)	6,506	(1)	(1)
Kentucky	11,077	9,848	16,552	18,495	(1)	(1)
Minnesota	59,242	47,471	49,346	51,122	49,293	39,397
Missouri	25,297	10,347	25,463	28,872	101,403	101,569
Nebraska	(1)	(1)	(1)	(1)	(1)	(1)
North Carolina	947	(1)	3,687	(1)	11,529	14,269
Ohio	53,793	50,057	75,693	73,348	247,088	268,988
Texas	(1)	(1)	(1)	(1)	(1)	(1)
All other	52,063	21,860	86,955	74,735	496,064	536,431

(1) Included in "all other" to avoid disclosure of operations by individual companies.

Soybean Products: Production and Stocks at Oil Mill Locations, by States, February 1956-January 1956

State	Crude Oil (thousands of pounds)				Cake and meal (tons)			
	Feb. 1956	Jan. 1956	Feb. 29 1956	Jan. 31 1956	Feb. 1956	Jan. 1956	Feb. 29 1956	Jan. 31 1956
U. S.	271,253	270,046	53,450	66,295	563,223	567,037	137,487	99,924
Illinois	108,792	100,678	15,934	19,481	210,469	197,498	50,934	32,394
Indiana	25,159	29,985	4,497	9,044	54,127	65,013	28,077	13,294
Iowa	45,629	49,001	8,415	12,488	97,373	104,994	25,087	22,381
Kansas	(1)	2,214	838	(1)	(1)	5,346	(1)	(1)
Kentucky	6,022	6,777	877	(1)	12,839	14,448	867	(1)
Minnesota	18,295	18,945	7,351	5,716	37,504	40,315	2,324	1,825
Missouri	9,260	10,318	2,297	2,316	20,280	22,747	2,410	2,929
Nebraska	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
N. Carolina	1,093	(1)	476	(1)	2,961	(1)	4,374	2,463
Ohio	27,295	26,217	4,050	4,324	60,322	58,643	2,531	3,404
All other	29,708	25,911	8,715	12,926	67,348	58,033	20,883	21,234

(1) Included in "all other" to avoid disclosure of operations by individual companies.

INSPECTIONS. Soybeans, inspected by grades and percent, as reported by Agricultural Marketing Service.

Grade	Oct. Feb. 1954-55		Oct. Feb. 1955-56		February 1955		January 1956		February 1956	
	1,000	bu.	1,000	bu.	1,000	bu.	1,000	bu.	1,000	bu.
No. 1	20,407	14	38,859	20	2,038	20	5,091	24	6,187	29
No. 2	70,459	50	94,421	49	5,202	51	10,692	50	10,301	49
No. 3	36,429	26	39,653	21	1,985	19	3,985	18	3,057	14
No. 4	10,160	7	14,472	8	568	5	1,333	6	1,180	6
Sample	4,733	3	4,329	2	482	5	478	2	484	2
Total	142,188	100	191,734	100	10,275	100	21,579	100	21,209	100

¹ Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. Based on reports of inspections by licensed grain inspectors at all markets.



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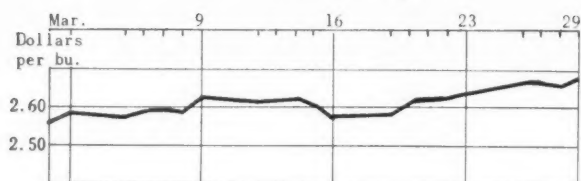
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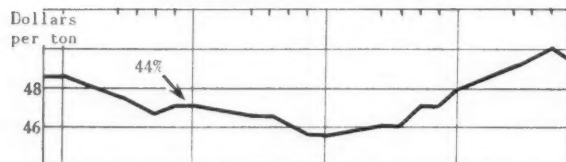
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State 2-1700

DAILY MARKET PRICES

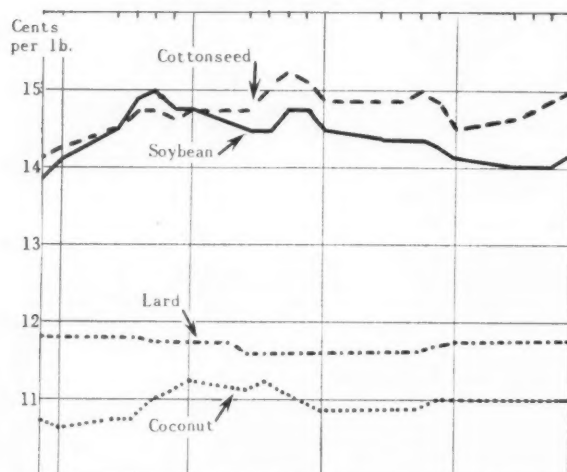
No. 2 Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Vegetable Oils and Lard



SOYBEANS and soybean oil again pushed to new high ground for the 1955-56 marketing year. By month's end spot soybeans were selling above the year-earlier level for the first time this season.

Soybean oil at 15¢ reached the highest price since September 1951, then receded 1¢ from the top by the end of the month. Gap between cottonseed oil and soybean oil widened somewhat during the month.

Meal, on the other hand, dropped below the low point of last November to a new 10-year low, then rallied \$4 before the end of the month.

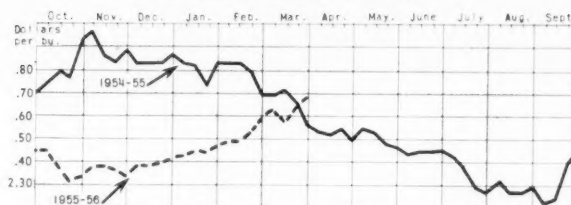
The booming oil market based on a big export business has been the controlling factor and has kept processors operating at record capacity of almost 25 million bushels a month. Mixed feed sales picked up some before the end of March and there was some talk of export interest in meal. The oil market was sustained largely by the continued strong export demand for oils. Additional allocations of vegetable oils for a number of countries were made in March, but some were for next year's business.

Bearish influences included:

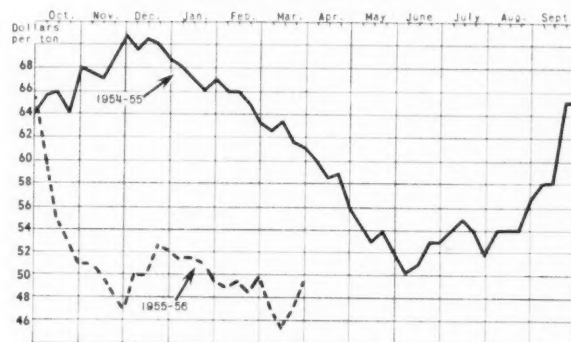
1—Decline in export sales of beans due to higher prices. Inspections for export were lighter than for some months. It was reported that Japan, Germany and Holland were making large purchases of Chinese or Manchurian beans due to lower asking prices than U. S. exporters could offer. However, there were reports that China could not fill all orders, and the re-entry of Japan into the American market helped to lend strength toward the end of the month.

TRENDS AT A GLANCE (Weekly Close)

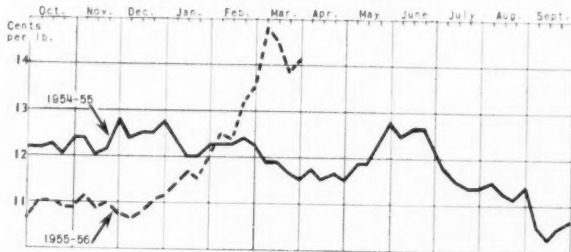
Near Futures Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Soybean Oil, Tankcars



2—The Mar. 1 intentions forecast of the Department of Agriculture indicating that 1956 soybean plantings will be up.

Bullish factors:

1—Relatively light country marketings which led traders to believe the supply of beans still in growers' hands is small.

2—Reports that refiners are not covered too far in the future in oil.

BY PRODUCTS. The price for soybean fatty acids was raised from 14¼¢ per pound to 15¢ in March. Acid soybean soap stocks were raised from 6¼¢ to 6⅞¢; and raw soybean stocks from 2½¢ to 2¾¢.



A C E N T U R Y O F S E R V I C E



Meris C. Barbeau, Jr.

President and General Manager, S. Howes Co., Inc.

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